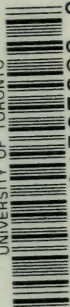


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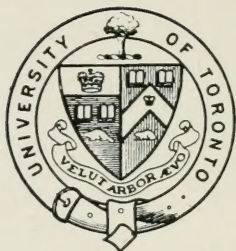


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The A B C of Bond Buying

HOW THE ORDINARY INVESTOR
MAY JUDGE BOND VALUES

BY G. C. SELDEN

Author of

"The Machinery of Wall Street,"

"Investing for Profit," Etc.



THE MAGAZINE of WALL STREET

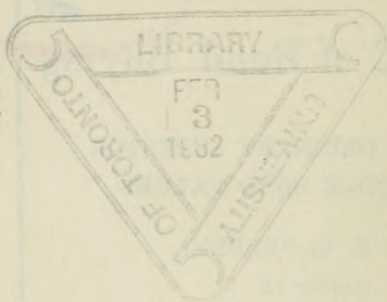
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PREFACE

The principal object of these chapters is to aid the average investor in getting a working knowledge of the principles of bond buying which will be a practical help to him in making his investments.

At the same time a number of points are brought out which are not without an element of novelty. They have occurred to other students of the subject but have not been emphasized and in some instances have not previously found their way into print.

In order to make the book as comprehensive as possible some chapters have been very much condensed but it is believed that they will be easily intelligible to the careful reader.

Generally speaking, the book is based more on the writer's actual experience in dealing with investors than upon the researches of other students of the subject.

G. C. SELDEN.

New York, August, 1919.

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CHAPTER I

1—Why Bonds Exist—Difference Between Bond and Mortgage—The Word “Bond” Means Very Little

While a number of books have been published outlining the general principles of bond investment, describing and explaining the various classes of bonds, and advising which classes should be chosen by different kinds of investors, it is to be feared that the average individual or institutional bond buyer finishes reading these volumes with the feeling that they shed little light on the most important part of the problem.

The situation of every bond investor is the same to this extent, that he has a certain amount of money available, or has decided to save a certain amount monthly or yearly, and he wants to buy bonds with it which are:

- (1) Safe.
- (2) Satisfactory from the point of view of interest return.
- (3) Likely to continue to sell at a price as high as he paid for them, or preferably to advance.

After reading some of the bond books above

referred to, the investor sometimes feels that they have told him everything about bonds except how to obtain these three vital requirements.

From the very nature of the case it would be impossible to lay down any simple set of rules which could be mechanically applied to any bond in such a way as to give an offhand answer to these three questions. There are hundreds of different kinds of bonds—although they all consist, as I shall endeavor to show, of different combinations of a small number of essential elements. The corporations and municipalities issuing these bonds are of almost infinite variety. No two bonds are in exactly the same position as regards their claim on the property of a corporation or their relation to its earnings.

Every bond, therefore, must be approached and tested as an individual bond, not primarily as a member of a class called by some special name. The unsecured bond of one corporation—such as a debenture, adjustment, or income bond—may be many times stronger than the secured bond of another company though backed by a first mortgage on all the company's property. And it is equally true that a company which has doubtful prospects as a whole may nevertheless sometimes be in a position to issue

a particular form of bond which is entitled to a good rating as an investment.

For this reason it is highly important that the investor should have a good general idea of the principles which lie at the basis of judging bond values. He can, it is true, get considerable help from various sources in the selection of securities, but first hand knowledge is always better than second hand. And he will feel more confidence in his bonds, and therefore have less occasion for anxiety in regard to them, if he has selected them after a personal examination of their value.

In these chapters my object will be to set forth as simply and clearly as possible those facts and principles which every bond buyer needs as a back ground and basis in the examination of any particular bond. At the same time I shall endeavor not to dodge any part of the subject which presents difficulties or complications. It is easy to attain a fictitious simplicity by that method, but distinctly unfair to the reader.

How Do Bonds Come Into Existence?

The fundamental reason for the existence of bonds is to enable the man who wants to engage in business to use not only his own mon-

ey but also the money of others who do not want to engage in business.

A great many persons come into the possession of money who do not know how to use it—and money will not earn interest unless it is used. A savings bank, for example, could not pay interest on the money deposited in it if the money was merely allowed to lie there idle. The money must be loaned to somebody who can make profitable use of it and therefore can afford to pay interest for the use of it. It may be loaned to a farmer who wants to increase the stock on his farm, to a grocer who has more orders than he can handle with his own money, to a railroad whose president sees a chance to build a branch line which will be profitable, and so on.

On the other hand, there are many business men who can see opportunities for good profits but lack the money to take advantage of those opportunities. A lumber operator may know of a tract of timber which can be bought at a reasonable price and of a good market for the lumber; he may have the necessary experience and ability to establish a saw mill and manufacture the lumber and sell it; but he may not have the money to handle such an enterprise. And the same in any other line of business.

How are the money and the man to be brought

together? Evidently by some sort of borrowing. Any new enterprise will involve the use and ownership of tangible property, in greater or less amount. The promoter of the enterprise can therefore arrange to borrow some money by giving the lender a direct mortgage claim on this tangible property. Perhaps he can get an additional amount of money on the general credit of the company he forms, that is, its note or debenture. For this he would usually have to pay a higher rate of interest than on money which was secured by tangible property.

He will then need still more money, and to get that he admits a number of other people into partnership in the business, and the stock which is issued is merely the evidence of this partnership, showing the proportional share of the business which each stockholder owns.

Difference Between Bond and Mortgage

A mortgage bond is nothing but a mortgage split up into small pieces, to correspond with the amount the investor may wish to put in. The mortgage is drawn to apply upon the property specified and agreed upon, and to cover the bonds as a whole. All the bondholders together con-

stitute the mortgagees, and can take possession of the specified property, if necessary, by acting together.

Under the common law the mortgagee, or lender of the money, became the actual legal owner of the property and the mortgagor, or borrower of money, could only get it back again by paying interest and principal in full. But under modern conditions the mortgagee cannot properly be considered as the owner of the property, but merely has a lien on it for the amount of his loan and can take possession of it if the loan is not paid or if the interest is allowed to lapse.

The actual handling of a mortgage involves examination and valuation of the property, investigation of titles, and many other legal formalities and expenses. And if the mortgage has to be foreclosed these are still further multiplied. It does not pay the lender of a small sum of money to go to all this trouble and expense. But when bonds are issued all these formalities have to be gone through but once for all the bondholders taken together.

The individual bondholder, therefore, ordinarily has nothing to do but buy his bond and clip the coupons, or sell it if he is so minded. If foreclosure becomes necessary a bondholders' committee has to be formed to handle the matter.

For the average investor, therefore, a bond is much more convenient and economical than a mortgage, and for that reason a mortgage is nearly always split up into bonds if the amount of money required is large enough to warrant that method.

A mortgage can be placed upon any kind of property, whether real estate, plants and machinery, personal property, or any form of collateral securities such as other bonds, notes, and stocks—upon anything, in fact, which has value. Moreover, a second mortgage may follow the first upon the same property, a third may follow the second, and so on indefinitely.

Since any sort of a mortgage may be split up into bonds, it is evident that we may have a great variety of different kinds of mortgage bonds. And not only that, but bonds may have no mortgage behind them, but merely the general credit of the company which issues them, just as man gives his personal note without security. In fact, a bond may contain almost any sort of provision, provided that it calls for the payment of a specified amount of money at a future date. It may be issued without interest, or the interest may be payable only when earned by the company. It may be payable only when earned by the company. It may include almost

any sort of privileges or restrictions, such as convertibility into another bond or stock, or being paid off after a certain date at the pleasure of the company, and so on.

The Word "Bond" Means Little

It is evident, therefore, that the word "bond" means little or nothing to the investor. The important question is what the provisions of the bond are and what property or whose credit guarantees that those provisions will be carried out.

The average investor has more respect for a bond than he has for a note—yet the bond may be nothing but a note, so far as security is concerned. In fact, it may contain provisions which would make it rank a good deal below a note issued by the same company. I know of a certain small railway which has no securities, and never had any, except first mortgage bonds and equipment notes. The bondholders are really partners in the ownership of the property, except that their dividends are limited to the interest rate specified in the bonds. There would be no object in their foreclosing under any conditions, for they own the whole property now. If that company should make large profits they would necessarily pile up in its treasury or be

the investor who has a working knowledge of the peculiarities of bonds in general can very quickly recognize the nature of any special bond in which he may be interested.

spent in improvements and extensions. There is nobody to whom the profits could be paid out beyond the specified interest on the bonds. That illustrates the fact that you never know what a "bond" is until you have examined all factors concerning it.

The first thing the bond buyer ought to do is to eliminate from his consciousness any prestige that the word "bond" may now have there. There are bonds and bonds. From the investment standpoint the word has no significance worth mentioning. It is merely a convenient term by which to designate a piece of paper bearing certain engraved, printed or written characters.

In considering any particular bond, then, the first question is, What are its provisions? What sort of claim on property and earnings does it give the holder?

While it is true that almost any sort of provision may be included in a bond, there are certain ones which are customary and are met with in nearly all bonds. These have come to be known by names which are in common use. So

The legality of the bond issue was carefully examined into by the house through which the bond was issued, so that it is hardly ever necessary for the investor to investigate that subject. And the general nature of the bond, with any special provisions, is usually summarized in current bond manuals or in circulars issued by reputable bond houses. Hence it is not a difficult matter, in most cases, for the investor to inform himself in regard to the provisions of the bond and its claim on the property.

Bonds are usually quoted at a certain price "and accrued interest." That is, if the interest was last paid on Jan. 15, a buyer on Feb. 15 at a price of 87 would pay for his bond (\$1,000 par) \$870 plus the interest accrued from Jan. 15 to Feb. 15. New York Stock Exchange quotations are on that basis, except for income bonds, which are quoted "flat" because the payment of the next interest coupon is optional with the company. If interest on a bond is in default there will be no accrued interest to add.

Practically all bonds are obtainable in either coupon or registered form. The coupon bond does not stand in the name of the owner, but is like a note payable to bearer. The coupons are clipped off and deposited at a bank like an ordinary check as soon as they fall due. The

registered bond stands in the owner's name on the company's books and has to be transferred when sold. The interest is mailed to the owner in the form of a check when due. A registered bond can be indorsed in blank and thus made payable to bearer, but in that case the interest checks will continue to go to the registered owner until the registry is changed.

CHAPTER II.

II—General View of the Bond Field—Bonds Classified by Their Characteristics

IN order to obtain a working knowledge of the art of bond buying it is necessary first to get a general view of the bond field, so as to know what kind of bonds are available and something about their peculiarities.

Since a bond is primarily a loan of money the lender or bond buyer naturally asks himself such questions in regard to it as the following:

Who stands behind this bond? Who agrees to see that the interest and principle are paid when due? Also, *what* is behind it? Has it a special provisions attached to the payment? And how and when is the interest payable? What taxes will have to be paid?

The answers to these obvious and common sense questions constitute a classification of bonds. If a bond has a mortgage behind it, it belongs to one class. If it has not, it belongs to another class. A bond issued by the Government is in a different class from one issued by a corporation, and so on. And when we have looked over the various classes of bonds in this way, we have a pretty good idea of the kinds of

bonds that are available and of their principal characteristics.

In the table herewith bonds are classified on the above plan. First, who issues the bond and agrees to pay it when due? It may be issued by a government, a municipality, or by any of the several classes of corporations shown in the table.

Second, what is the security behind the bond? It may be a mortgage or lien on the different kinds of property enumerated, or the bond may be guaranteed by some other company, or it may be simply a company's promise to pay.

Third, how is the interest payable? Is it unconditional, or payable only when earned, or is it accompanied by some additional share in the company's profits? Each of these peculiarities gives rise to a certain class of bonds.

Fourth, how is the principal payable? And the various ways in which payment may be provided for are shown in the table.

Finally, to what extent and how is the bond taxed? This point has of course become more important with the growth of taxation.

Since I have said that each bond must be examined by itself regardless of the name it may happen to go by, it may be asked why I bother with a classification. The answer is, in order to

arrive at a clearer understanding of the almost innumerable varieties of bonds.

Why Bonds Are Classified

Since I have said that each bond must be examined by itself regardless of the name it may happen to go by, it may be asked why I bother with a classification. The answer is, in order to arrive at a clearer understanding of the almost innumerable varieties of bonds.

Any particular bond must fall under some one of the classes named in *each* of the five general divisions of the table. It is evident that the possible combinations of different characteristics are almost infinite. If you are a mathematician you may be interested in working out the number of these varieties by the principles of permutation and combination. Personally, I am satisfied to know that the answer would be a very long row of figures.

To view the field in any science, we must classify, and we must examine varied characteristics separately before we attempt to arrive at the result of their innumerable combinations.

Most of the classes enumerated in the table are so obvious as not really to require explanation, but some comments may be helpful. Under the

first group, for example, it is clear that a bond must in part derive its character from the nature of the organization which issues it. A government or municipality has the right to tax its subjects' property all away from them in order to pay its bonds, if that should be necessary. But a merchandizing company, such as Sears-Roebuck or Woolworth or many others, needs very little ownership of property in comparison with its turnover of goods. It may lease its stores and warehouses, and at one time it may have on hand only one-fourth or one-tenth of the goods it sells in a single year. So there will necessarily be a great difference between government bonds and bonds issued by merchandizing companies.

General Classification of Bonds

(1) Issued by:

Governments.

Municipalities.

Corporations:

Railroads

Public Utilities:

Street Railways

Gas and Electric

Telephone and Telegraph

Industrials:

Steel, Iron and Coal

Manufacturing

Merchandizing

Mining.

Shipping.

Miscellaneous.

(II) Secured by:

Mortgage or Lien on:

Municipal Property

R. R. Trackage, Terminals, etc.

R. R. Equipment

Franchises

Real Estate

Plants and Improvements

Collateral (Other bonds, notes or stocks)

Sinking Funds

Guaranty or Endorsement.

Promise to Pay.

(III) Interest Payable:

Unconditionally.

If Earned (Income or Adjustment Bonds):

Cumulative

Noncumulative

With Share in Profits.

(IV) Principal Payable:

Not Payable (Perpetual Loans).

At Fixed Date, Uniform for Issue.

At Fixed Dates, Serially.

By Partial Payments.

When Called for Payment by Company.

When Demanded by Holder under Cash Surrender Privilege.

In Form of Other Securities under Convertible Privilege at Holder's Option.

(V) Taxed:

Tax-Free.

Free from Taxes of States Where Issued.

Subject to Income Supertaxes Only.

Subject to All Taxes:

Company Pays No Tax for Holder

Company Pays 2% Normal Income Tax

Company Pays 4% Normal Income Tax

Yet we must not overlook, even temporarily, the fact that the bond of a very strong merchandizing company will be better than the bond of a weak or dishonest government. We must get rid of the slavery to names. We must make our classification a servant, not a master.

Coming to the second group, the tangible security behind different kinds of bonds will be

discussed more fully in the next chapter. In the meantime we may note that a bond secured by guaranty or endorsement still has behind it only a promise to pay, but it has the promise of two companies instead of one. These bonds are usually those of a sub-company guaranteed by the parent company, or of a leased railway line guaranteed by the lessee.

The correct name of the promise-to-pay bond is debenture, which means merely that the amount is owed. But debenture bonds are not always named debentures by the companies issuing them—another case where we must emancipate ourselves from slavery to names and titles.

Payment of Interest and Principal

In the third section of the table, nearly all bonds come under the first class, interest being payable unconditionally. "Income" bonds, on which interest is payable only when or if earned, are few. Sometimes they masquerade under the name of "adjustment" bonds or some similar title. On this class of bonds, if the interest is not paid one year it is evident that it might be still due the next year, or not, according to the terms of the bond; that is, the bond may be cum-

ulative or non-cumulative, the same as a preferred stock.

Only a few bonds contain any provision by which they share in the profits of the company. Such a bond is a sort of cross between a bond and a stock.

At first thought it might seem that there must be very little to be said about the payment of the principal of a bond, yet I have been obliged to make seven different classes under that head. First, a bond may have no date of maturity. It may be framed to remain outstanding indefinitely as a permanent loan—on the same principle as the stock, which has no maturity, but represents a permanent share in the ownership of the company. There are a few such bonds.

Nearly all bonds come under the net class, the bonds fall due serially; that is, if 1,000 bonds are issued, 100 of them might come due each year, or according to any other arrangement of dates. In such cases the due date is specified in each bond, so that the holder is in no doubt as to the maturity of his particular bonds.

There are also a few issues in which each bond is paid off by partial payments. For example, a \$1,000 bond might be paid off at the rate of \$100 a year for ten years, with interest

coupons for each year adjusted to the amount of principal still unpaid.

"Callable" Bonds

Next, a great many bonds are "callable," usually at a price a little above par, and often not until after a certain specified date. On these bonds the company has the option of paying off the bond in accordance with the provision for "calling," which is incorporated in the bond itself. For example, a bond may be callable at 102 at any time after three years from date of issue. This leaves the holder uncertain as to how long his bond will run, since the company will call it at 102 or leave it outstanding according to the necessities of its business. A prominent example is the U. S. Steel Corporation's sinking fund 5s, which are nominally due in 1963, but may be called at 110 and accrued interest on any interest day, after eight weeks' notice.

A few bonds have been issued which permit the holder to surrender his bond to the company for a fixed amount of cash if he desires to do so. This cash payment is less than the par value of the bond, and is inserted to assure the holder of a market for the bond at a moderate sacrifice

if he should be unable to sell it elsewhere.

Finally, a great many bonds are convertible at the option of the holder into other stocks or bonds (usually stocks) at a fixed price. In many cases this convertible privilege does not become operative until after a fixed future date.

The most common plan is to permit the bondholder to convert his bond into the company's stock at a price somewhat higher than the stock is selling for when the bond is issued. This arrangement is very attractive to the investor. For if the company becomes more prosperous, so that the price of its stock advances above the convertible figure, he can exercise his privilege of conversion and reap the advantage of the rise; but if the company is not especially prosperous, the investor retains his bond, with its claim for interest and on the company's assets ahead of the stock. It is a sort of "Heads I win, tails you lose" arrangement for the bond buyer, and for that reason the convertible bonds of prosperous companies often sell higher than they would sell without the convertible privilege, even though the prospect of exercising that privilege may still be some distance off.

When we come to taxation, we find that nearly all municipal bonds and part of the U. S. Government bonds are entirely tax-free. Then

there is a small special class of bonds which are free from taxes in the state where they are issued, but are taxed by other states. Next, some of the Liberty bonds are tax-free except that they are subject to the income supertaxes.

Bonds issued by corporations are in nearly all cases subject to all taxes, but in some instances the company obligates itself to pay the bondholder's 2 per cent. normal income tax on the interest. This is paid direct to the Government and deducted from the interest before it is paid to the bondholder. A few companies pay the full 4 per cent. normal income tax provided for in the law as it now stands, paying 2 per cent. to the Government and the other 2 per cent. direct to the bondholder.

CHAPTER III.

III—The Mortgage Bond—Security Behind Different Classes of Bonds.

The mortgage bond, in the minds of many investors, expresses the highest security outside of U. S. Government bonds. Everybody is familiar with the mortgage, which means that if you can't get your money when it is due you can take certain property and sell it and apply the proceeds to the payment of what the debtor owes you. Where the property is worth more than the debt, this seems like a "sure thing." So the investor concludes that a bond which has a mortgage behind it must be about the best kind of bond to own.

In regard to many mortgage bonds that is certainly true. But in other cases the original simplicity of the mortgage has all but disappeared under superimposed complications, and in other instances the value of the property behind the mortgage may have depreciated to such an extent that about all the word "mortgage" amounts to is to give a pleasant sound to the title of the bond.

Moreover, the mortgage may not apply directly

on specified real estate, plants, equipment, etc., but may be on "collateral," or stocks or bonds which to greater or less extent represent such properties. Then the question of course arises what this collateral is worth and whether it is going to continue to be worth it.

Ossa Piled on Pelion

Some of our railroads have piled Ossa on Pelion in the matter of mortgages. The clearest way is to take an example, and I will select the Chesapeake & Ohio Ry. convertible 4½s because this is after all, as matters now stand, a promising bond, in spite of the remoteness of its mortgage backing.

There are \$37,200,000 of these bonds authorized, of which \$31,390,000 have been issued. These are secured *jointly* with \$125,000,000 authorized, \$47,265,000 issued of "first lien and improvement" bonds as a first lien on 40.9 miles of road, a second lien on 4.2 miles, third lien on 743.8 miles, fourth lien on 801.7 miles, and a fifth lien on 252 miles. Since the two issues of bonds are secured pointly by these liens, it is essential to know that the "first lien and improvement" bonds also have behind them collateral of a *par* value of \$47,148,000. This,

however, indicates nothing as to the *market* value of that collateral. In fact, it is often difficult to estimate the market value of inactive, underlying collateral under a bond issue. The collateral, it will be noted, does not apply on the convertible 4½s. Their claim is solely on the miles of road specified.

It is easy to see that it would take a good deal more than the proverbial astuteness of the "Philadelphia lawyer" to estimate the value of these bonds on the basis of their mortgage security. And we may note in passing how little it takes to make a "first lien and improvement" bond—the only real property (as distinguished from collateral) on which that issue has a first lien being 40.9 miles of road, while the total amount authorized for the two issues of bonds is \$162,200,000.

Now what does all this mean? That the C. & O. convertible 4½s are valueless? By no means. Merely that the mortgage security behind them is so mixed and remote from the rails that the bonds may as well be considered debentures, that is, simply a debt owed by the company and secured by its general credit standing. Considered from this standpoint, the outlook for these bonds is very good, although they are not classed as strictly "high grade."

When a Mortgage Has Value

It is well to remember that the only value the mortgage has for the mortgage bond holder is when the company goes into receivership. Up to that moment it makes no difference to him whether his bond has any security behind it or not. The interest will be paid until receivership comes, and the principal is not yet due, or if it comes due that must be paid also.

When receivership does come, of course the holder of a bond which has a strong first lien on the property will be likely to come out much better than the holder of a bond which has only a distant lien or no direct lien at all. But it is self-evident that it is much better to be the owner of a debenture bond of a company which will not go into receivership than the owner of a first mortgage bond of a company which will.

The strength of the company, therefore, should be given a great more weight in the selection of a bond than the character of the mortgage security behind the bond. And this is just where the ultra-conservation and excessive caution of the average bond buyer leads him into a mistake. He has been thoroughly educated in the idea that he must have sound security for any loan. So when he considers buying a bond his first

thought is about the security behind it; and in many cases he devotes more time to the careful study of that than he does to the examination of the company's earnings, growth and general prospects.

Even with the best mortgage security, a receivership is annoying, worrisome and often a losing proposition. It is better to devote time and study to picking out securities of companies which will avoid receivership than to selecting those which would come through a receivership satisfactorily.

This mistaken state of mind on the part of many investors results in creating the following rather surprising situation: The risk in the highest grade bonds is nearly always greater *in proportion to interest yield* than the risk in lower grade bonds.

Suppose, for example, one investor puts \$50,000 into high grade mortgage bonds which yield him an average of 5 per cent. yearly interest. For simplicity we will assume that they are all due in ten years. At the end of that time, then, he has his \$50,000 back and has received 50 per cent. in interest, or \$25,000. Another investor puts the same amount into ten-year bonds which give him an average yield of 7 per cent.—which are necessarily of a lower average grade

than the bonds which yield 5 per cent.

At the end of the ten years the second investor, if all goes well, will have his \$50,000 back and will have received 70 per cent. in interest, or \$35,000. He is \$10,000 ahead of Investor No. 1. That is, the second investor could lose the principal of one \$1,000 bond each year during the entire period and still come out even with Investor No. 1. That would mean that one-fifth of his \$50,000 bonds went into receivership and proved a total loss—and the chance of loss on well selected 7 per cent. bonds would not be nearly so great as that. On the average, not more than two or three of the fifty bonds would result in a loss.

The above assumes, of course, that Investor No. 2 did not put all his eggs in one basket, but made a distributed investment in his fifty 7 per cent. bonds. If so, his risk was smaller in proportion to results obtained—because he obtained better results, even assuming that a few of his bonds proved to be no good.

To phrase it a little differently, *high grade bonds sell higher in comparison with their real value than the lower grades of bonds.*

There is another reason for this, besides the psychology of the average investor. Savings banks are limited by law to investments in cer-

tain classes of high grade bonds. That has a tendency to increase the demand for such bonds and therefore to raise their price in comparison with other bonds.

Security Behind Different Bonds

A fact that illustrates the elasticity of names for bonds is that a U. S. Government bond is a debenture only—it is the Government's promise to pay. But the credit standing of the United States makes the bond much stronger than any mortgage bond. The same may now be said of our state bonds, although there have been a few cases of repudiation in the past. Also, there are a few doubtful state bond certificates afloat, so that a state bond should be examined as to its validity before purchase.

The payment of state and Government bonds depends upon good faith, but payment of a municipal bond can be enforced by appeal to the state or federal courts. The main considerations, therefore, are the assessed valuation of the property included in the county or municipality and the extent to which it may be taxed under the constitution or statutes of the state. These are compared with the total outstanding debt of the municipal division issuing the bonds. But it is

to be borne in mind that the total assessed valuation of a county, for example, must cover not only the debt of the county itself but also the debts of subdivisions, such as townships and cities.

The validity of a municipal bond has to be passed upon by competent legal authorities; and the good faith of the municipality, as shown by its previous dealings with investors, naturally has great influence upon the price of its bonds.

Actual mortgage security behind municipal issues is not uncommon, such mortgages applying on the special property for the creation or improvement of which the bonds were issued. Moreover, in New England a judgment against a municipality may be executed against the estate of any inhabitant, so that holders of New England municipal bonds have security equal to a mortgage on all the property within the municipality.

As to railroad bonds, we have already seen that the mortgage security behind them is often very complicated. Which bond issue should be rated as coming before another is often a question for hair splitting debate. Lawrence Chamberlain, in "The Principles of Bond Investment," has summarized the general question of precedence as follows: "The secured obliga-

tions of a corporation are superior to the debenture; lien security is surer than guaranty; lien on realty is stronger than lien on personalty; realty that is merchantable, or that has its own independent earning, makes a better lien than realty that cannot readily be sold or that has earnings dependent upon the cohesion of the entire property. A first mortgage has a better claim than a second; a second than a third; primary liens anticipate secondary liens, and secondary liens anticipate junior liens."

This is really about all that can be said, or that needs to be said, about the priority of railroad bonds. The railway equipment bond, however, stands upon its own feet and has no relation to the other securities of the railway company. It is secured by a mortgage upon certain specified equipment—that is, locomotives and cars—and if the interest and principal of equipment bonds are not paid when due the holders of the bonds can take over the equipment and sell it to satisfy their claim regardless of the railroad itself.

Equipment bonds are always dated to mature serially, so that as the equipment itself depreciates through use the amount of the bonds outstanding grows less. In nearly all cases the maturity of the bonds is considerably shorter than

the life of the equipment, so that the proportional security behind the bonds is constantly increasing. For this reason, as well as because of their direct mortgage claim on tangible and movable property, equipment bonds are highly thought of and usually sell at prices which give only a moderate yield on the investment.

Public Utility Bonds

Street railway bonds are similar to steam railroad issues, but the securities of a street railway are usually much less complicated. The important difference in the position of these two classes of companies is that the steam railroad owns its right of way, while the street railway uses the public streets under a franchise. The length of the franchise, therefore, becomes an element in the value of the company's bonds, since there is never any certainty as to the terms on which the franchise can be renewed. In some cases, however, it is perpetual.

Other public utility bonds often suffer under this difficulty of a limited franchise or charter,—such as gas, electric, water and irrigation bonds. But in recent years numerous such companies have been gathered into large groups under holding corporations, and the bonds of these holding

companies are necessarily much stronger, other things being equal, than the bond of a separate utility serving a single community. On the other hand, an intricate analysis is often necessary before the true position of such a holding company can be determined, because of complicated intercompany relations and the lack of complete reports as to the earnings of some of the sub-companies.

There are two kinds of real estate bonds. One kind is based upon the combination of a large number of real estate first mortgages, against which as security the bonds are issued bearing a rate of interest slightly lower than the average rate on the various mortgages. If the company issuing these bonds is honestly managed, such bonds are high grade.

The other kind of real estate bonds is issued as a basis for real estate promotions. A company owning a considerable amount of improved or unimproved real estate issues debenture bonds. The interest on them has to be earned by the income from improved property or the rise in value of unimproved, or both. It is evident that such bonds are essentially speculative.

Industrial bonds are usually the simplest of all to diagnose, because they represent either a first mortgage on plants or merely the general credit

of the company. The conservative investor has been inclined to discriminate against them because of the wide fluctuations in earnings of most industrial companies. But this general prejudice is unjust. Every bond should be examined on its own merits.

CHAPTER IV.

IV—Guaranteed Bonds—Sinking Funds—Collateral Trusts—Debentures—Income Bonds

There are a few other points in connection with the different kinds of bonds and the provisions they contain which need to be explained more fully before we proceed to discuss the relation of a company's earnings to its bonds and the other factors which enter into bond values in general.

Guaranteed Bonds are quite different from "assumed" bonds. It is to be borne in mind that the ordinary bond—aside from debentures or notes—has behind it two forms of security: (1) The general credit of the company which issues it. (2) Some sort of lien on real or personal property.

In a case where one company buys out another, so that the second goes out of existence and all its property is owned by the first, the outstanding bonds of the second company will retain their claim or lien on whatever real or personal property they were originally based upon. In that respect the position of such bonds will be unchanged. But their claim on the general

credit of the second company has disappeared, because the second company no longer exists. This claim has to be "assumed" by the first company in connection with its purchase.

In many cases, however, one company merely buys control of another and the second company still retains its corporate existence. In these instances the first company frequently guarantees the bonds of the second, thus adding its own general credit to the security previously behind the bonds.

This may be done by inserting the guaranty in the bonds themselves or by a separate document, or by an indorsement on the bonds just as a note is indorsed. It is important for the investor to note just what the guaranty covers in each case. In some instances it covers both principal and interest and in other instances the interest only. There may also be indorsements on a bond which are not a guaranty, such as a record that the mortgage-recording tax has been paid, or other similar facts.

The mere fact that one company controls another does not constitute a guaranty of the latter's bonds, since that control may at any time be relinquished. But in cases where control is so essential to the controlling company that it could not afford to let go, it must necessar-

ily take care of the sub-company's bonds in order to retain its hold.

As regards security, there is very little difference between bonds of a subsidiary guaranteed by the parent company and bonds assumed by the latter company. In receivership, assumed bonds have a prior claim over guaranteed bonds; but on the other hand there might be cases where a parent company would go into receivership while its subsidiary remained solvent.

Sinking Funds Sometimes Deceptive

Sinking Funds.—In many cases it is provided that a certain sum shall be set aside every year, or periodically, out of earnings to provide for the payment of specified bonds at maturity. The sinking fund as it accumulates is sometimes carried in banks, but it thus earns only a small rate of interest, so that plan is not an economical one. A more common plan is to use the sinking fund to buy in the open market some of the bonds before they mature. These can be kept alive by the company, which thus pays itself the interest on them, or they may be cancelled.

This method, however, often results in forcing the price of the bonds in the market to a higher level than where they would naturally sell. Sometimes the price which may be paid

is limited in the sinking fund agreement, and if the bonds cannot be bought at or below that price the trustee of the fund may be empowered to invest the fund in othre ways.

Sinking funds do not, as a matter of fact, afford as great protection as the novice might suppose. It goes without saying that the company's total income cannot be increased by a sinking fund provision. The real question therefore is whether the company's position is strengthened by the requirement that a certain amount of its income shall be set aside as a sinking fund, as compared with using the money in other ways. If this money were to be paid out in dividends on stocks, that would weaken the position of the bonds as compared with the segregation of the same amount of money in a sinking fund: but if it were used in the intelligent extension of the company's business, it might be worth a good deal more to the bonds than it would be in a sinking fund.

The management of the sinking fund also enters into the problem. In some cases sinking funds have been badly handled. Unless the sinking fund agreement is very carefully drawn it is evident that the existence of such a fund constitutes a temptation to use it for personal ends.

While a sinking fund bond, therefore, is somewhat more desirable—other things being equal—than a bond not backed up by a sinking fund, the difference is not so important as many investors imagine.

Collateral Trust Bonds have as their security, in addition to the general credit of the company issuing them, a lien on the stocks or bonds of other companies (often subsidiaries). The issuing company does not wish, for one reason or another, to sell these stocks or bonds which it owns; therefore it sells its own bonds based on these other stocks or bonds as collateral security.

It is clear that collateral trust bonds are as good as the collateral behind them and that they also have the benefit of the issuing company's credit.

For example, in 1902 the Atlantic Coast Line bought 51 per cent. of the total capital stock of the Louisville & Nashville R. R. On this stock, par value \$36,720,000, as collateral security, the Atlantic issued \$35,000,000 of "L. & N. collateral gold 4s," due in 1952. The owner of these bonds is, to all practical intents and purposes, an owner of Louisville stock—with the addition of the general credit of the Atlantic Coast Line.

As this is written the bonds are selling at 70½

and Louisville stock at $116\frac{1}{2}$, which makes the yield to maturity on the bonds almost exactly the same as the income yield on the stock from its current dividend rate of 7%. This is because the investment standing of the Louisville stock is very high, the road having earned more than three times its dividends in each of the last two years. Hence the credit of the Atlantic Coast Line, although that is also very high, can add very little to the security of these bonds.

In a time of panic, however, the price of a stock is likely to fall more in proportion than the price of a bond, so that the market value of the Louisville stock might fall below the par value of the bonds based on it. Then the general credit of Atlantic Coast would come into play and would help support the price of the bonds.

In these cases the trust agreement under which the bonds are issued should, but does not always, fully protect the bondholders against delay in case they are obliged, through the failure of the issuing company, to take over the collateral security themselves; also against the sale of any part of the property represented by the collateral, or its being allowed to depreciate in value; and against the withdrawal of collateral and the substitution of something else of less value.

In other words, the trust agreement is an essential part of the bondholder's security and has to be examined before he knows where he stands.

Oftentimes railroad collateral trust bonds are based on a great variety of different bonds and stocks which the company happens to have in its possession and available for the purpose, so that it becomes an arduous process to figure out the probable value of the collateral security. For that very reason, however, unusual bargains may sometimes be picked up in this class of bonds by the investor who is shrewd and patient enough to investigate the value of the collateral and to keep track of changes in the position and earnings of the companies which issued the stocks or bonds used as collateral.

Some investors are inclined to look askance at collateral trust bonds as a class. There is no sound reason for this attitude. Everything depends on the character of the collateral and of the trust agreement as to whether the bond is any better than the plain debenture of the issuing company. For example, if the first mortgage bond of a subsidiary is pledged at less than its market value behind collateral trust bonds of the parent company, and if that subsidiary has good independent earning power, the collateral

bond will have a little better than a first mortgage claim, since the additional credit of the parent company is worth something also.

Position of Debentures

Debenture Bonds, in the absence of any express agreement as to their claim on the company's earnings or assets, place the holder merely in the position of a preferred creditor in case of receivership. If interest or principal is defaulted the holder may demand a receivership or he may obtain a judgment against the company and levy execution; but in most cases there will be prior claims ahead of him.

Sometimes debentures are protected by an express agreement that no new mortgage shall be created without the debentures being secured under it and in some cases debentures have been made a first charge on all the company's property, income and profits, to which any later mortgage loan would be subject. Any such special agreement, of course, strengthens the position of the debentures—and they add emphasis to the point already made that every bond must be examined impartially, regardless of its name.

Income bonds, it should be noted, sometimes have a mortgage security for the principal, in

spite of the fact that the interest is payable only when and if earned. The income bond is obviously very much like a preferred stock with the difference that dividends on the stock may be withheld at pleasure of the directors, while the income bondholder can sue for his interest if it was earned and not paid.

The income bondholder is often practically at the mercy of the management of the company for, if desired, other uses for money can always be found than paying income bond interest. Whether the interest was earned is often a question of bookkeeping, and the money can be used in extending the company's business or in improvements and maintenance, if the management desires to avoid paying it out as interest. So the advantage of the income bondholder over the preferred stockholder is slight, except in cases where his principal is secured by mortgage.

CHAPTER V.

V—Relation Between Earnings and the Value of a Bond

The most important single item affecting the value of a bond is, in practically all cases, the relation between the company's total interest charges and its earnings applicable to pay those charges. This is most conveniently reduced to a comparative basis in the form of "Interest Charges — Times Earned."

The main point needs no elaboration. If a company's total interest charges are usually and customarily earned three times over, it is clear that its bonds, taken together, are in a much stronger position than those of a company which earns its interest charges only one and one-third times.

The above factor applies to all of a company's bonds together. Its great importance lies in the fact that if interest on any one bond is defaulted (aside from income bonds) the company has to go through receivership, which affects the value of all its bonds.

Earnings for Different Classes

But we know, of course, that one bond of a

company may be selling to yield $7\frac{1}{2}\%$ at the same time that another bond of the same company yields only $5\frac{1}{2}\%$. In most cases, therefore, it is desirable to go beyond the item of "Interest Charges — Times Earned," important though that may be, to find the reasons for such differences.

If we look over the list of the outstanding bonds of a railroad—I take a railroad company because it nearly always has a greater variety of bonds—we find that the various issues may be roughly divided, according to the strength of their position, into four classes:

(1) Bonds on which interest is earned by a satisfactory margin and which will also, because of the character of their mortgage liens, be in a good position in case of receivership.

(2) Bonds on which interest is earned by a satisfactory margin but whose mortgage liens are on sections of the road having small earning power considered separately, or whose liens are of a mixed and general character and preceded by other liens, so that in case of receivership the bonds would be in a doubtful position.

(3) Debenture bonds, on which interest may or may not be earned by a satisfactory margin, and which have only a general claim in case of receivership.

(4) Income bonds, on which interest does not have to be paid unless earned.

Some companies would not have all these classes of bonds. Most railroads have the first three at any rate.

To make this clearer, let us take an example. Suppose that you notice, in some list of investments, that Seaboard Air Line first mortgage 4s are selling to yield 6.5% and Seaboard adjustment mortgage 5s yield 9.2%. (These happen to be the current yields.) You start to investigate the character of these two bonds as investments.

On referring to some current manual or statistical service, you see that the Seaboard, like most other systems, has been built up out of smaller roads, and that 16 out of its 20 different bonds issues are the bonds of these smaller proprietary companies. Most of these proprietary bonds have first mortgage liens, and have been assumed or guaranteed by the Seaboard or are based upon parts of its line which show good earnings independently or are absolutely essential to the integrity of the system as a whole—having, therefore, a sort of prior claim upon earnings and assets.

The Seaboard first 4s are in a similar position, the comparatively small amount of \$12,775,000

outstanding having a first lien on over 200 miles of main line and 40 miles of branch line, and a second lien on 1,568 miles, with additional third, fourth and collateral liens.

However, you note that two of the proprietary bonds, the Atlanta & Birmingham first 4s and the Florida West Shore first 5s, are not rated as highly as the rest. This is because they are based upon newer parts of the system, which have a relatively smaller independent earning power.

You next come upon the Seaboard refunding 4s and find that their first lien is on relatively unimportant parts of the system and their other liens range from second to fifth; and you class these, along with the first and consolidated 6s, as having a poorer claim on the property than the bonds previously discussed.

Finally you have the adjustment mortgage 5s. You note that their interest is "cumulative and not to exceed 5%" and is "payable out of surplus net earnings of company"—in other words, an income bond. Its mortgage claim follows the refunding 4s on same property and securities, and it is junior in position to the first and consolidated 6s. This is getting pretty near the vanishing point so far as liens are concerned.

How to Apply Earnings

You have now discovered that the first mortgage 4s, yielding 6.5%, belong in class 1 of the four classes above outlined; while the adjustment mortgage 5s, yielding 9.2%, belong in class 4 and in the matter of their claim on earnings are about the same as another preferred stock coming in ahead of Seaboard's regular preferred (which may receive, if the directors declare them, 4% noncumulative dividends).

You next want to know what margin Seaboard usually earns above its bond interest *not* including the adjustment bond interest (since that is not necessarily paid); and also the margin above *all* bond interest, including the adjustment bonds, so as to get the position of the adjustments.

You therefore figure out, or find in your manual, the following results:

	Bond Interest (Excl'g Adjust.) Times Earned	All Bond Interest Times Earned
1911	1.88	1.38
1912	1.61	1.18
1913	1.84	1.37

1914	1.75	1.33
1915	1.31	1.01
1916	1.62	1.28
1917	1.47	1.16

From this you conclude that all bonds in Class 1 are in a comparatively safe position, though not entitled to the very highest rating; but that the adjustment 5s are decidedly speculative, since they would be the first to lose their interest in case the company failed to earn its full charges, and in three years out of the seven the excess of earnings over charges was small. However, since the interest on these 5s is cumulative, it is likely to be met on the average, unless a period of very dull business should overtake the company or some other very serious difficulty should develop.

If you desired to give an investment rating to all the bonds of the system, you would carry the above process a step further by, first, separating all the company's bonds into the four classes above described, about as follows:

Class 1—Seaboard first 4s, and 14 bonds of proprietary companies (I will not take the space to enumerate them by name).

Class 2—Atlanta & Birmingham first 4s and Florida West Shore first 5s.

Class 3—Seaboard refunding 4s and Seaboard first and consolidated 6s.

Class 4—Seaboard adjustment 5s.

You would then figure the times interest was earned on class 1; on classes 1 and 2 combined; on classes 1, 2 and 3 combined; and on all four classes combined.

It must be understood that "Times Earned," as worked out by this method, does not represent the way in which earnings are actually applied to the bonds, for a default on a bond in any of the first three classes would throw the road into receivership. What you get is a sort of rating, based on earnings, which enables you to estimate approximately the investment standing of the bonds in the several classes.

How Not to Do It

It is entirely misleading to figure the times interest is earned for class 1; then the times it is earned on class 2, after deducting interest requirements for class 1; next the times earned for class 3 after deducting both class 1 and class 2, etc. This method will very often give a higher "margin of safety" above interest requirements for a bond on the tail end of the list than it gave for the best bonds the company has outstanding.

It will certainly give that result where the total of class 4 bonds outstanding is small compared with previous classes, since the "times earned" depends on the amount of the interest requirement just as much as it does on the earnings applicable. Yet, strange to say, exactly this erroneous method is often employed.

Another unsatisfactory method is to attempt to judge a bond by average earnings for a period of years. It is quite necessary to examine earnings for six to ten years past, but it may be entirely misleading to *average* them. It is rare indeed that any company is standing still—it is either growing or going down hill, in at least nine cases out of ten, and your average does not show you which way it is going. This may be highly important.

For example, let us suppose that some company ten years ago earned its interest charges 2.3 times over, but that earnings have been falling off or interest charges increasing or both, until last year the charges were earned only 1.1 times. An average for the ten years might be perhaps 1.6 times, which would not indicate any special danger to bondholders; but an examination of the "Times Earned" year by year would show a steadily declining tendency and would indicate plainly that unless that tendency could be

immediately reversed, a receivership was in prospect.

In some cases it may be helpful to figure a ten-years' average, *after* examining the trend of earnings, year by year. If a company shows no marked trend for the period, but its earnings have fluctuated considerably with variations in general business activity, the ten-years' average would help somewhat in judging the value of its bonds.

We are beginning to get a glimpse now of some of the principles that may be applied in the selection of bonds to get better than ordinary yields.

For example, the bonds of a growing company do not as a rule respond immediately to its improving prospects. Bond buyers as a class are very conservative and do not act until they are *sure*. A company will often show for two or three years the beginnings of a marked and permanent growth before a bond of that company which has always been considered speculative will advance in price enough to lower its interest yield materially.

During this period the investor who is carefully watching conditions can buy the bond at a bargain price; for he will not only get a relatively high income yield on his investment but when

the bond finally responds to the better prospects of the company he will also get a profit from the advance in the price.

Picking out the cheap bonds is, naturally, something of an art, but it is much less venture-some than selecting cheap stocks. It is for the most part a question of sound business sense added to a fair knowledge of the broad principles of bond investment.

CHAPTER VI.

VI—Bond Yields and the Use of Bond Tables

The subject of bond yields usually seems somewhat mysterious to the novice. If he buys, for example, a \$1,000 (par value) 6% bond for \$900, interest payable semi-annually, he knows that he will get \$30 interest every six months, which will make his \$900 investment net him about 6.66% annually—that is, \$60, the amount he receives yearly, is 6.66% of the \$900 which the bonds cost him.

So far all is clear enough. But the novice soon learns, or perhaps sees for himself, that this 6.66% is not the *yield* on his bond; for he bought the bond for \$900 and it is going to be paid off at \$1,000. He will get an extra hundred dollars when the bond matures, in addition to the 6.66% in the meantime.

Moreover, if other influences do not interfere it is evident that the price of this bond will be gradually rising throughout the period it has to run. It will not sell at 90 one day and be paid off at 100 the next day. The price will crawl slowly up throughout the entire period.

If therefore the bond has 10 years to run, in five years it will have risen something like half

way from the purchase price of 90 to the price of 10 at which it will be paid off. The investor does not have to wait until the bond matures to get this additional profit. Whenever he sells his bond he will get that part of the profit corresponding to the time elapsed—provided, as I said before, other influences do not interfere. Of course these other influences always will affect bond prices to a greater or less extent, but, on the average, they are just as likely to be in his favor as against him, and they do not enter into the computation of the yield.

So the actual annual yield of the bond will be the 6.66% above figured, plus a certain average annual rise in the price. The annual *income* from the bond is 6.66% but the annual *yield* must include also the proper proportion of the increment in its value.

If the investor paid more than par for the bond, the process would be reversed. The price would gradually fall to par at maturity, so that the yield on the bond would be less than the annual income.

Yield Where There is No Maturity

Stocks, of course, have no date of maturity, and there are a few bonds which are perpetual.

In such cases there is no difference between income and yield. A 7% preferred stock bought at 93 yields a little over $7\frac{1}{2}\%$ (700 divided by 93), and since it never is paid off, that is the whole story. British Consols, Republic of Cuba 5s and a few other bonds likewise have no date of maturity. But in nearly all cases bonds have a definite date of maturity.

A 6% bond bought at 90, running ten years, par 100, will evidently rise about one point a year—but that does not mean that its yield will be 7.66% a year, for the investor does not get the additional \$100 on his \$900 investment until the end of the ten years. At the beginning of the period he would have to figure the “present worth” of that \$100 to find its actual value to him.

Similarly, if the investor pays 110 for the same bond, it will decline about one point a year for ten years until it is paid off at 100; but that does not make the rate of yield 4.45% instead of 5.45%, for the owner will be constantly reinvesting the \$60 a year which he receives on his \$1,000 bond. In this case, to get the true yield we shall have to figure compound interest on the excess of the annual income over the annual *yield*.

Thus the calculation of bond yields becomes

a complicated mathematical problem—too complicated to be worked out every time an investor wants to know what a certain bond yields at the market price. So these yields have been worked out in the form of bond tables, to which the investor can refer and find the yield on a bond at any rate of interest, for any maturity up to 100 years, and at any price for which such a bond is likely to sell under ordinary circumstances.

Use of Bond Tables

Various bond tables are obtainable, from pocket size to others quite elaborate, with the bond prices carried out from two to six or even more decimal places. One of the best (Sprague's "Complete Bond Tables") arranges the prices as shown in the example herewith.

Suppose the investor sees a 4% bond, due in two years, selling at $102\frac{3}{4}$.. He turns to 4% bonds in his table, finds the column for two years, and runs down it to the price of 102.75 (which would be 1,027,500.00 for a \$1,000,000 bond, on which the above table is based). This yield is a little nearer the figure 1,027,113.13 in the table than it is to 1,028,098.68, so the yield will be approximately 2.58%.

VALUES, TO THE NEAREST CENT, OF A BOND FOR
\$1,000,000 AT 4% INTEREST, PAYABLE SEMI-

ANNUALLY

Net Income	A B C OF			
	1/2 Year	1 Year	1 1/2 Years	2 Years
2.50	1,007,407.41	1,014,723.37	1,021,949.00	1,029,085.43
2.55	1,007,158.73	1,014,227.33	1,021,206.94	1,028,098.68
2.60	1,006,910.17	1,013,731.66	1,020,465.60	1,027,113.13
2.65	Etc.	Etc.	Etc.	Etc.
Etc.				

These particular tables cover bonds bearing interest at rates of 3% to 7% with maturities up to 100 years for bonds having a rate of 5% or lower and up to 50 years for 6% and 7% bonds—since these high rate bonds are nearly always for short maturities. Yields run up to 5% in the main table and up to 10% in a supplementary table which gives the yields in gaps of eighths of one per cent., instead of .05 of one per cent. as shown here. Other bond tables have different arrangements, but all on the same general principle.*

*A few readers will be interested to know how these tables are compiled. In the following formula P represents the price or present worth of the bond. C equals the amount of each coupon; for example, on a 6% bond with interest payable semi-annually, each coupon would be .03. N represents the net yield per interest period. That is, if the yield of the bond was 4%, the net yield each semi-annual period would be .02. And n represents the number of interest periods. For a 10 year semi-annual bond n would be 20. The formula is as follows:

$$P = \frac{C (1+N)^n + N - C}{N (1+N)^n}$$

By the use of logarithms, the prices of bonds for all rates of interest, maturities, and yields are worked out and compiled into a table.

To find the yield of a bond not included in the bond tables—the best of which run up to yields of 10%—the most practical way for the average investor is to substitute different yields for N in the above formula and thus arrive at the true value of N by approximation.

Intermediate rates of interest, such as $4\frac{1}{4}\%$ for example, or higher rates, such as an 8% bond, give no trouble even though not included in the table. The yield for $4\frac{1}{4}\%$ bond is just half way between the yield for a 4% and a $4\frac{1}{2}\%$ bond of the same price and maturity. The yield on an 8% bond would be that on a 6% bond plus the difference between the yield on a 4% and a 6% bond, or double the yield on a 4% bond, etc. This principle is readily grasped at a glance, although, curiously enough, many good bond men do not understand it.

But we cannot apply any similar plan to *yields* higher than shown in the table or to longer maturities. There is no way, for example, to get 12% yield or a 200 year maturity except by working it out.

I have recently had drawn up a series of graphs, published in book form under the title, "Bond Yields at a Glance," which give a much better idea of the principles of bond yields than can be obtained from a table and are also much quicker and easier than the tables. These give bond yields to an accuracy of about $1/16$ th of one per cent. and the liability of error in using them is less than the tables. For the ordinary investor and in most cases for bond men also, I consider these graphs superior to the tables.

In looking over one of these graphs it is seen that the prices of bonds to give yields above or below the interest rate of the bond, diverge quite rapidly for the first twenty-five years, more slowly for the next twenty-five, and after fifty years change but little. For example, take a 4% bond selling to yield 7%: With three years to run it will sell at 92; with nine years to run, at 80; with twenty-five years, at 65; 50 years, 58½. But at 75 years the price falls only to about 57¾, and at 100 years to 57. In other words, the longer the term of a bond the less important is the element of time in affecting its price.

A Debated Point

We have seen that the yield on a bond includes interest on interest, and also the present worth of a future premium above purchase price if the bond is bought below par. At what rate of interest should these calculations be made?

In the bond tables commonly used, and in the formula given in the foot note, this rate of interest is assumed to be the same as the rate of *yield* (not income) on the bond at the given price. If an investor buys a bond at a price which will give a yield of say 7% it is assumed that when

the coupons are paid to him he will reinvest that money at an average of 7% also.

This assumption would be substantially true of a very large investor, who was constantly cashing coupons and reinvesting the proceeds for the average rate at which he would reinvest would probably be about the same as the average rate at which he invested his funds when he bought his bonds. Many smaller investors also are in a position to use money as it accumulates, in such a way as to get about the same rate for it as the yield on their bonds.

In other instances, however, this is not the case. An investor having only one bond, which pays him say \$25 every six months, may not be in a position to immediately reinvest that \$25 at as high a yield as the yield on his bond. If he puts it in a savings bank the interest rate will, of course, be lower, in most cases, than the yield on the bond.

Some have contended that the bond tables should figure this interest on interest at a lower rate, but it would be difficult to decide at what rate. The small investor should bear in mind the fact that in case he cannot immediately reinvest the returns from his coupons, the actual yield to him on his bond will be slightly less than shown in the bond tables.

Another slight variation arises from the fact that the interest on some bonds is payable quarterly instead of semi-annually. This makes the yield a slight fraction higher but the difference is so little as to be unimportant to the investor.

Callable Bonds

Many bonds contain the provision that the company may call them in and pay them off at a special price, usually a little above par. The exact yield in case they are called may be figured by the formula already given. If the bond was bought at par or lower, this yield will of course be higher than the yield to maturity. If the bond was bought at a price higher than that at which it may be called, the yield on it if called will be less than the yield to maturity. It is customary for the investor to calculate his expected yield at the lowest rate which he might receive, whichever that may be.

CHAPTER VII.

VII—The Investment Rating of Bond Issues

The word "rating" is applied to different kinds of bonds very much as we use it in connection with business concerns, which are given a credit "rating" by the commercial agencies. And, we may as well add at once, much the same difficulties are encountered in rating bonds as in rating business firms. Each bond, like each firm, has its own peculiarities, and to do a thorough job of rating we should need about as many different ratings as we had bonds.

Still, every investor must rate a bond in some fashion before he buys it, for bonds range from those whose security is practically unassailable to those which are worthless; and in discussing various bond issues it is convenient to have some generally accepted classifications each of which serves as a sort of container into which a bond may be mentally dropped.

In rating bonds there are a number of mistakes to be avoided. I have already referred to the danger of depending upon the *average* earnings available for interest charges during a series of years, and the danger of judging any one bond out of a considerable number

issued by one company, by the number of times its particular interest charge is earned *after* providing for other bonds having priority over it.

Another mistake, as it seems to me, is to attempt to carry the application of cut-and-dried ratings to an extreme. One bond adviser has fourteen different ratings, running from Aaa to F. Where so many ratings are used it becomes a Chinese puzzle under exactly which rating any particular bond should be placed, because of the wide variation in the elements which enter into investment value. If bonds could be rated on one characteristic alone, the number of ratings could be multiplied at pleasure.

Looked at from a "horse-sense" point of view, the rating of a bond is not such a difficult matter, but the subject cannot be satisfactorily handled with tape measure and calipers.

A Practical Classification

A practical method of rating bonds, which consists merely of a slight extension upon terms commonly used by bond men and therefore somewhat generally understood, may be outlined as follows:

I. High Grade:

(a) Bonds of the highest grade, in regard to

which it is believed that the principal is secure and the interest payments assured, and which are easily marketable if the owner desires to sell. Bonds of this grade are effected by general market conditions, but scarcely at all by the earnings of the company which issues them.

(b) Bonds having substantially the same security as (a), but not so readily marketable because not so generally known or traded in, or whose prices are likely to be slightly affected by changes in the company's earnings.

II. Second Grade; intermediate between high grade and speculative:

(a) Bonds supported by good earnings, but somewhat deficient in the matter of underlying mortgage or property security.

(b) Bonds issued by companies whose earnings have usually fluctuated considerably from year to year, or in a branch of industry where considerable variations are likely to occur.

III. Speculative; bonds whose prospects are in some degree of doubt:

(a) Bonds whose position is apparently secure for some time to come but whose more distant future is open to some question.

(b) Bonds which are paying their interest but are in a weaker position than (a).

(c) Bonds not paying interest; that is in de-

fault, or else income bonds for which the necessary income is not being earned.

In order to give a concrete idea of what is meant by each of the above ratings, I will select one bond of each class and give a brief investment analysis of it. This will have the additional advantage of showing the general methods of analysis which are commonly employed.

I (a). Atchison General 4s, due 1995. Current price 81; current income on price 4.9%; yield 5.0%. Outsanding \$150,634,000; a first lien on 5,197 miles of road, or at the rate of \$29,600 per mile. Also first collateral lien—that is, a first lien through other securities deposited behind these bonds—on 1,389 miles; second lien on 1,961 miles; and further secured by deposit of \$90,480,000 (par value) of bonds and stocks of controlled railroads, terminals companies, etc. From this is seen that mortgage and collateral security is abundant.

For ten years Atchison has never earned its total interest requirements for all bonds less than $3\frac{1}{2}$ times in any years; in 1917 $4\frac{1}{4}$ times. The general 4s have an excellent market, being quoted nearly every day on the N. Y. Stock Exchange. The road has been exceptionally well managed and is, of course, one of the best systems in the country. It is difficult to imagine anything that

could happen which would seriously affect the security or marketability of this bond.

I (b). Union Pacific Convertible 4s, due 1927. Current price 85; current income on price 4.7%; yield 6.2%. Debentures, secured by the general credit of the company, which is very high. Convertible privilege has expired. Callable at 102½ and interest. Legal for savings banks in New Hampshire and Rhode Island. In ten years total interest charges for all bonds have never been earned by this company less than 3 times over. In 1916, interest charges earned 4.12 times. Good market on N. Y. Stock Exchange. market on N. Y. Stock Exchange.

It is evident that this bond is fully entitled to be rated as high grade, but since it has no direct mortgage security its price is likely to be slightly affected by any wide charges in the earnings of the company.

II (a). Chesapeake & Ohio Convertible 4½s, due 1930. Current price 77; current income on price 5.85%; yield 7.4%. Nature of security behind this bond was explained in Chapter III; it is but little better than a debenture. In ten years this company has never earned all interest charges less than 1¼ times; in 1917, 1.82 times. Under these condition the bond must be rated as second grade, although it is apparently secure

and the general prospects of the company for further growth are excellent.

II (b). Bonds of this class, which begins to approach the speculative plane, need careful examination. A good example is International Agricultural First and Collateral 5s due 1932; Current price 75; current income on price 6.7%; yield 8%. The following analysis of this bond was recently issued in connection with The Magazine of Wall Street's Investment Letter Service:

"We are asked whether these bonds are a safe investment, in view of the fact that a large part of the present earnings of the company are a result of its contract with the Tenn. Copper Co. for sulphuric acid and are therefore dependent on the war.

"This Co. was incorporated in 1909. It owns and operates 13 plants, fertilizer and acidulating, one (a mixing plant) in Me., two in N. Y., one in Ohio, and the rest in the Southeast. It has also acquired from time to time the capital stocks of 17 fertilizer and phosphate companies, the two most important being the Agricultural Investment Corporation with \$1,000,000 stock, and the Prairie Pebble Phosphate Co. with \$1,380,000 stock. It originally owned the Kaliwerke Sollstedt Gewerkschaft, a German potash company, but sold half its holdings in 1912, while

the present value of the remainder is problematic because of the war.

"In 1912 \$13,000,000 of these bonds were issued, about half to retire bonds of subcompanies and the other half to retire floating indebtedness which had arisen in connection with the acquisition of various holdings. The bond issue was, therefore, warranted by the property acquired. A minimum of \$325,000 of these have to be retired yearly by sinking fund; and since the Co. has to pay into the sinking fund 20 cents a ton on all phosphate mined above 1,000,000 tons, more than \$325,000 may sometimes be retired. Amount outstanding has now been cut down to \$10,275,000. They are abundantly secured by first mortgage on valuable assets. From this point of view there is no question as to their safety.

"As to the company's earnings, the 1912 showing was large but illusory, since in that year the amount received from the sale of half the Kaliwerke holdings was credited to income—a peculiar method of bookkeeping. The immediate loss of half the Kaliwerke dividends with the later loss of all, because of the war, together with very dull fertilizer business in this country, reduced earnings sharply from 1913 to 1915. In those three years interest charges for these bonds were

earned only 1.2 times annually. A third cause of these small earnings was the discontinuance of exports of phosphate rock, previously a considerable source of income.

"During the last three years earnings have taken a tremendous jump. To what extent has the increase been due to profit on the sulphuric acid contract with Tenn. Copper? These profits were about \$450,000 on the 1916 fiscal year (ending June) and about \$700,000 in 1917. Results therefore have been as follows:

	Times bond Int. earned	Times bond Int. earned Without acid profits
1916.....	3.62	2.29
1917.....	3.54	2.85
1918.....	5.00*	(?)

"It will be seen that this bond interest has been earned more than double without any acid profits. This is due to increased demand for fertilizers, better fertilizer per ton, and the development of the company's properties. Demand for fertilizers after the war will certainly exceed the demand immediately before the war. Profit per ton might possibly be no larger. The acid contract continues to 1921, and orders ahead indicate good profits for the 1919 fiscal year as well as for 1918.

*Estimated before Federal Taxes.

"In view of the fact that these bonds are being constantly retired by sinking fund, it is hard for us to imagine conditions under which their interest would be earned less than $1\frac{1}{2}$ times after the war, while probabilities favor its being earned nearly twice. We believe, therefore, that these bonds are a conservative investment for business men up to the end of the war at any rate. Of course the investor should keep posted on their outlook, as with any business man's investment."

III (a). Erie Convertible 4s "D," due 1953. Current price 52; current income 7.7%; yield 8.2%. Convertible into common stock at 50 until 1927 (present price of common 15). Practically a debenture, secured by company's credit, which is not high. In 1908 company's fixed charges were not fully earned; in 1914 earned only 1.04 times; in 1917 1.5 times; in best years, 1913 and 1915, earned $1\frac{1}{2}$ times.

Clearly a speculative bond, but earnings now guaranteed by Government will probably be sufficient to cover all the company's fixed charges about $1\frac{1}{4}$ times, so that interest on this bond is sure until the Government releases the roads. Presumably after the war the roads will be permitted to charge high enough rates to enable this company to earn its bond interest.

III (b). Minneapolis & St. Louis First and

Refunding 4s, due 1949. Current price 45; current income 8.9%; yield 9.5%. Outstanding, \$13,244,000; first lien on 227 miles, or at rate of over \$58,000 a mile; also second, third, fourth and collateral liens. Company underwent voluntary reorganization in 1916. Past history checkered. Bond interest charges not fully earned in 1914. In 1916, earned 1.4 times; 1917 report not yet out.

III (c) Hudson & Manhattan Adjustment Income 5s, due 1957. Current price 20; interest not being paid. Substantially equivalent to a non-dividend paying preferred stock. Income is comparatively regular from year to year and it now has the benefit of a Government guaranty, but the amount available for this bond is not sufficient to warrant interest payments at present. However, the bond has speculative prospects, as this company's business will enjoy a gradual growth.

CHAPTER VIII.

VIII—"Seasoned" Securities—Prejudices of Investors—Effects of Buying by Institutions

It is not a difficult matter to discover whether the interest on a bond is customarily earned by a safe margin, so that it is reasonably sure of being paid, and what sort of other backing the bond has in case unexpected reverses should involve the company in difficulties; and these are, as a matter of course, the principal elements in the value of any bond.

But there are a number of other elements which affect bond values, and there are still other factors which affect bond prices as distinguished from values—for it is by no means certain that the price of a bond will always be an accurate measure of its investment value. These last mentioned factors are of special interest; for any investor will naturally prefer to buy a bond which is selling below its real investment value and to avoid buying one which is selling above its value.

What is a "Seasoned" Bond?

Any one who starts to read up on bonds soon runs across the term "seasoned securities." It is one of the shibboleths of the trade. I don't know whether it has ever been accurately defined, but the general meaning is a security which has passed through seasons enough to demonstrate the permanent earning power of the company.

The age of a security, however, has nothing to do with its value. It merely has to do with the *investor's* knowledge of its value.

Every new company is, in greater or less degree, an experiment. Nothing is more common than for a new company to be launched under the most promising—I do not use the word in any double sense—auspices, only to meet unforeseen difficulties and prove a partial or complete failure. The first few years of its life are, like those of a baby, the most critical. Once they are safely past and earning power has been demonstrated, the investor breathes more easily. The enterprise will still be open to the danger of changing conditions, which can never be outgrown, but it has at least got a foothold in the field of profitable business.

My observation is that many investors exagger-

ate the importance of this "seasoning" of securities. A company which has paid dividends on its stock regularly for twenty or fifty years is regarded with a sort of superstitious awe, when as a matter of fact it may long since have passed its heyday and may be approaching the period of senile decay.

When time enough has elapsed to enable the investor to decide intelligently as to a company's prospects, the passing of additional seasons does him no good. The ideal time to buy its securities is *just as soon as it has demonstrated* a satisfactory earning power. This time can hardly be the same for any two persons. The promoter of the company, if clear-visioned and unprejudiced, may be able to discern an assured earning power before the company is formed. Many fortunes have been built on that sort of prevision.

The ordinary investor usually has to wait a few years to see what the company can do in good times and in bad, before his judgment as to the safety of its bonds has time to ripen; but beyond that period I do not see that "seasoning" is of any help to him.

As a broad principle, *the older a good bond becomes the higher it sells in comparison with its genuine investment value.*

This is partly because the "conservative" in-

vestor shies at a new security. But it is also because the "floating supply" of a new security is likely to be larger. Out of a \$10,000,000 bond issue, more and more of the bonds year by year become lodged in the hands of investors who "never sell," or become tied up in trust estates, held by banks or insurance companies for permanent investment, and so on, until eventually the bond, if it is a prime security, becomes hard to buy.

In fact, I believe it would be a good thing to abandon the use of the term "seasoned securities," because it seems to imply that the reasoning itself is the important consideration. That is not true. The important thing is the investor's ability to judge the bond. He will necessarily have to wait until, from some source, he gets the facts to go on, but whether a number of "seasons" are required or none at all, has nothing to do with the case.

The Prejudices of Investors

Investors have many of the characteristics of human beings, and therefore often have unfounded prejudices against one kind of bond or in favor of another. And since a man's act in buying or selling a bond is merely an exercise of bus-

iness judgment and therefore the outgrowth of his whole character, these prejudices affect prices and cause one bond to sell above its logical value and another to sell below.

For example, American investors have always looked askance at bonds issued by industrial companies. This is because industrial earnings have usually fluctuated more than railroad or public utility earnings. But even when an industrial bond is so well margined by earnings that it should not be affected by changes, or when the record of the company shows that its earnings fluctuate no more or even less than those of most railroads, the bond may still suffer because it belongs to the industrial class. For that reason the discriminating investor will usually find more bargains among industrial bonds than among railroad bonds.

Another prejudice is that of locality. The nearer a company's location is to him, the greater confidence the average investor has in it. A Massachusetts man would rather invest in a Massachusetts bond than in a Texas bond, although in every other respect the two bonds might be equally sound. He feels that he knows less about the Texas bond, although in fact he may have just as much information from just as reliable sources, as though the company is-

suing the bond was in the next township.

When it comes to foreign bonds, the prejudice against them in America has been so strong that up to the beginning of the war our total holdings of foreign securities were so small as hardly to be worth counting. The war has broadened our ideas considerably, but the prejudice in favor of American securities is still pretty strong.

The result of this is that the best bond bargains are usually to be found among the securities issued in localities where investment capital is relatively scarce. Where there is a good deal of inherited capital, as in New England, for example, the bonds of local enterprises easily find buyers close at hand. But in Arizona, where as yet there is no large fund of accumulated capital, there is only a small local demand for bonds, and in order to attract capital from a distance a somewhat higher rate of interest has to be paid than would have to be paid if the same enterprise were located in New Jersey.

It is often true that an investor can not obtain as good information about a distant company as about one near at hand—but the difficulty is not in the distance but in the lack of information. In other cases it may be possible to obtain much better and more trustworthy information about the more distant company. So far

as distance *alone* influences the investor, he is acting upon prejudice rather than upon judgment.

The preference of investors for bonds based on mortgages is of course perfectly sound and reasonable; yet in the actual working out of that preference a great deal of prejudice often creeps in. For example, two bonds may really be entitled to the same investment rating, but if one of them has some tail-ends of mortgages under it so that it is classified as a mortgage bond it is likely to sell higher than the other which is a plain, undisguised debenture. For that reason there are likely to be more good bargains, in proportion to the number of such bonds outstanding, among debentures than among mortgage bonds.

Some investors, again, prefer a bond which sells below par to one which sells above par, even at the same calculated yield and with all other investment factors equal. This is because the bond below par must rise before maturity while the bond above par must fall. As previously explained, this is all allowed for in the calculation of the yield; nevertheless the investor doesn't like the feeling of paying 110 for a bond which he knows is going to be paid off at 100.

Buying by Institutions

Because the bonds which savings banks may hold are prescribed by law in many states, buying by savings banks is necessarily concentrated on those securities and operates to keep their prices a little higher in proportion to actual investment value than the prices of other bonds which the banks are not permitted to purchase. This is an element of such importance that it generally pays the individual investor to comb over the list of non-savings bank bonds pretty carefully before selecting those which are on the savings bank list. He can usually get a better yield with the same safety and prospects.

Also, the fact that a bond is legal for savings banks affords no guaranty of its investment future. That is because investment values cannot be determined by any arbitrary rules, and a law prescribing a certain kind of bonds is necessarily based on arbitrary rules. Those rules deal chiefly with the past record of the company in previous years.

Briefly, the New York law permits savings banks to invest in United States obligations; New York State obligations; those of other States which for ten years have not permitted any obligations to remain in default more than

ninety days; obligations of municipalities in New York State; stocks or bonds of incorporated cities, under numerous specified restrictions; bonds or mortgages on unincumbered real estate in New York State up to 60% of appraised value; first mortgage bonds of a railroad system or part of a system controlled by a New York corporation which for five years has not defaulted and has paid 4% or higher dividends on its stock, the amount of stock being equal to one-third or more of total mortgage indebtedness; other railroad mortgage bonds under complicated restrictions; certain kinds of promissory notes and real estate; bonds of the New York State land bank.

The restrictions as to railroad bonds which may be held are based upon (1) mortgage security; (2) age, since in most cases the mortgage must antedate 1905; (3) past earnings, in most cases for ten years; (4) size, a minimum mileage of 500 or earnings of \$10,000,000 being required in most cases.

Most of these provisions, it will be noted, necessarily deal with the past history of the company, which cannot be an absolute guaranty as to its future. Recent notable examples of this fact are seen in some of the bonds of the St. Paul and Baltimore & Ohio roads. Although

legal for banks, they have sold well above a 7% yield basis, which indicates plainly the judgment of investors that they are no longer to be rated as highest grade bonds.

There is no ready-made substitute for a careful examination of each bond with a view to its future as well as its past.

Purchases by other banks than savings banks, by trust companies and by insurance companies also affect bond prices. In the main these institutions naturally make their selections with a good deal of conservatism, mostly from among the highest grade of securities. Their purchases help to create the condition which has already been referred to, that the yield of the highest grade securities is smaller, not only absolutely but *in proportion to risk*, than the yield of a *well distributed* investment in second grade or even in carefully selected semi-speculative bonds.

CHAPTER IX

CURRENT INCOME VERSUS YIELD— EFFECT ON BOND PRICES—IM- PORTANCE OF TAXES

I have already explained the importance of the difference between current income from a bond and the yield of the bond—current income being the sum invested as derived from the annual interest payments alone, while the yield takes into account also the gain or loss which results from the fact that the bond will be paid off at par at maturity although it may have been purchased considerably above or below par.

The return from a bond should always be measured by the yield, as given in bond tables (or in the book of bond yield graphs published by THE MAGAZINE OF WALL STREET), and not by the current income; since the yield takes into account the natural appreciation or depreciation in the price of the bond as well as the current interest payments.

For example, suppose a bond pays 4% interest but sells enough below par so that the yield is

7%. Theoretically, the price of that bond should advance just enough each year so that the 4% interest plus the rise in the price will together equal a 7% rate; and, practically and actually, the price *must* rise that much on the average from date of purchase to date of maturity, although in the meantime it will have other fluctuations resulting from the general conditions affecting bond prices and money rates. Therefore the yield, on the average, represents the actual return to the investor.

Influence of Current Income Rate

As a matter of fact, however, many investors are influenced by the current income, so that a bond paying, let us say, 6% interest annually is preferred over one paying $3\frac{1}{2}\%$ even though the yield of the two is the same as figured from the bond tables. In the one case the investor receives \$60 a year immediate income from his \$1,000 bond and in the other case only \$35 a year. He prefers the \$60, even though the eventual result would be the same. He feels sure of the \$60, while he does not feel sure that, in any particular year, the price of the $3\frac{1}{2}\%$ bond will rise enough to bring his \$35 up to \$60, and even if it should, he would not get the cash in

hand without selling his bond.

The outcome of this feeling is that, *of bonds having the same investment value, those giving a high current income sell somewhat higher, and therefore show a slightly lower yield, than bonds having a lower current income.*

I do not find that this matter has ever been commented on before, but it will be found to correspond with the experience of those engaged in placing bonds with investors, and it is also evident from a close examination of incomes and yields of different bonds.

Take the C. B. & Q. Ill. Div. $3\frac{1}{2}$ s and 4s, due in 1949, two bonds of equal investment rank. The 4s have a higher current income—4.94% against 4.83%, at current prices—but a lower yield—5.24% against 5.32%. I mention these two bonds because they are so nearly identical, although the differences in both income and yield are trifling.

The table herewith affords a better illustration. I have selected two groups of high grade railroad bonds, the current income from the second group being more than one per cent. higher than that from the first group.

So far as I can see the average investment standing of the second group is quite as good as that of the first group, yet their yield averages

only 5.25% against an average yield of 5.66% for the first group. There can, I believe, be no doubt that it is the desire of investors to get 6% interest coupons of the second group that leads them to pay somewhat higher prices for the bonds, thus making the average yield 0.41% lower.

The practical bearing of this fact is that the investor who takes a broad view of results may as well leave these bonds which have an extra high current income to other investors who place exceptional weight on that point. The bonds having a low current annual income but a higher yield according to the bond tables are more to his advantage in the end.

Or, to come at the matter from the opposite direction, bonds paying a low rate of interest are likely to be a better bargain than bonds paying a high rate of interest but showing the same yield. A 4% bond yielding 6% is likely, other things being equal, to be a better bond than a bond yielding 6%. A 4% bond yielding 6% is probably entitled to as good an investment rating as a 6% bond yielding 5.75% or even less.

The investor will of course bear in mind that this is only one element in bond values. I have discussed it rather fully because it has heretofore been neglected. Especially, the reluctance of

many investors to buy bonds selling considerably above par sometimes has an influence directly opposite to that here discussed.

Effect of Taxation on Bond Values

The state of affairs in regard to the taxation of bonds, considering the country as a whole, can only be described as a disgraceful mess. In nearly all states bonds are considered as intangible personal property and as such are subject to the regular personal property tax, which is sometimes so high that it becomes an important factor. But many owners of bonds have a way of forgetting that bonds are personal property when the tax assessor comes around—in fact, there are very few subjects in regard to which memory is more treacherous.

It is also to be borne in mind that the rate per cent. of the personal property tax in any locality, when taken alone, does not tell what the taxes are. The rate of assessment is equally important. In New York, assessments are supposed to be at "full value," which can only mean market value; but in many other states assessments are made far below the market value—sometimes not more than one-quarter of it.

United States bonds and those of our insular

possessions issued before the war, and the bonds of territories or of municipals in territories are exempt from all taxes. State and municipal bonds have been generally assumed to be exempt from U. S. taxation, including income taxes, but the

INFLUENCE OF CURRENT INCOME ON BOND YIELDS

	Current Income	Yield to Maturity
B. & O. prior lien 3½s.....	4.01%	5.75%
C. B. & Q. Iowa Div. 4s.....	4.08	5.40
Colo. & Sou. 1st 4s.....	4.68	5.89
Ill. Cent. Louisv. Div. & Term 3½s	5.29	5.71
L. S. & M. S. 25-yr. 4s.....	4.76	5.77
Pa. R. R. 1st R. E. 4s.....	4.76	5.77
Average.....	4.52%	5.66%
C. St. P. M. & O. cons. 6s.....	5.72	5.46
St. P. M. & M. 1st 6s.....	5.56	5.22
L. & N. gen. 6s.....	5.41	4.79
Norfolk & West. gen. 6s.....	5.69	5.43
Nor. Pac. Term. 6s.....	5.62	5.32
Average.....	5.60%	5.25%

point has not been passed on by the courts. None of the recent Liberty bonds are entirely free from taxation, although the first 3½s are subject to estate and inheritance taxes only.

As to the incidence of State and local taxes,

the resident of each locality has to familiarize himself with the laws of his state, county, township where townships exist, and local municipalities, as variations are innumerable. In many cases a bond is exempt in the state where issued but taxable in other states. Some states have special laws in regard to taxation of bonds. In Pennsylvania, for example, a bond becomes tax free by payment of an initial fee.

The application of a personal property tax to bonds is inherently illogical because the property against which the bonds are issued has already been taxed; but doubtless it is useless to discuss logic in connection with taxation, the two having been from time immemorial as widely separated as the poles. In practice all governments, democratic or monarchical, have always applied taxes where they could get the money the easiest, with but slight regard for equity.

The result of our almost inextricable tangle of tax laws is that a bond is usually worth a good deal more to an investor in one state than to an investor in another state. A corporation bond on which the New York investor has to pay only his income tax, may be worth much more to him than to an investor in some locality where the bond is subject to the regular personal

property tax, which in some cases might be \$20 a thousand.

Tax exempt bonds, therefore, are most in demand in localities where personal property taxes apply to bonds and are high. They are also in demand for investors having big incomes, because of the high supertaxes which rich investors have to pay.

In some sections it is difficult to sell a taxable bond because of the very heavy personal property taxes. A tax of \$20 a thousand, applying to corporation bonds, cuts the yield from 6% to 4%, for example. The honest investor, who intends to pay his taxes strictly in accordance with the law, cannot afford to buy such a bond in competition with investors who have to pay only a trifling tax on it or who avoid the tax entirely by a convenient lapse of memory.

In short, of all the absurdities of our tax this idea of taxing intangible personal property which it is based on, is perhaps the worst. Corporations have to pay a higher interest rate on new bond issues to cover the taxes which the buyers will have to meet. So the net result is double taxation on new enterprises—and new enterprises are perhaps the greatest essential toward industrial and social progress. By double taxation on his efforts, we deliberately handicap the man

who is trying to build up new business.

So long as such conditions exist, the only thing for the bond buyer to do is to inform himself thoroughly on the tax laws of his locality and *figure all bond yields after deduction of all taxes*, whether national, state, local, or income taxes. He will often find that the result is important, not to say astounding. Doing this involves a little work, but even if he has but a few thousand dollars to place he will find himself well repaid in the better net returns which he is able to get from his investments.

With the great increase in all taxes during the last two decades, and now with the addition of a heavy burden of war taxes and war indebtedness, the question of taxation has grown tremendously in importance to the investor. His first thought in regard to any security—after he is convinced of its soundness—should now be, "What will my tax be on this." And he should make sure that this question is answered correctly before proceeding further.

He must also be careful, in calculating what a corporation is likely to earn for its bond interest, to allow for the increased taxes the corporation must pay ahead of that interest; but this takes us away from the subject under discussion in this chapter.

CHAPTER X

CONVERTIBILITY AS A FACTOR IN VALUES—OPTIONAL REDEMPTION

When any issue of bonds is made convertible into the stock of the issuing company, there is at once added to the purely investment value of the bonds a speculative value which is dependent on the probability that the stock may rise enough to make the convertible privilege yield a profit to the bond holder.

The bond is no longer merely a bond, since it may share in an increase in the company's earnings through being converted into stock. Convertible bonds, therefore, require special consideration.

The first thought of the novice always is that the privilege of converting a bond into stock at par, for example, is of no value until the stock sells at par. This is true when the bond is selling at par and the stock below par—but in no other case.

Conversion at par means that \$1,000 par value of bonds may be exchanged for 10 shares of

stock. If the bonds are actually selling at \$1,000 the conversion privilege will not be exercised until the 10 shares of stock can be sold for more than \$1,000; but if the bond is selling at 75, so that \$1,000 par value of bonds is worth only \$750, it will pay the bond holder to convert as soon as the stock sells above 75, so that the 10 shares of stock can be sold for more than the \$750 which represents the current value of the bonds.

When the conversion price is above or below par a little calculation is necessary to determine the effect on the bond. Suppose that a bond is convertible into stock at 130. That means that \$100 par value of bonds can be exchanged for one share of stock at a price of \$130. In other words, the price of the bond, if based on the conversion privilege, would always be 100-130ths of the price of the stock. Suppose the bond is selling at 70 and the stock at 85—70 is 100-130ths of 91, so it would pay the bond holder to exercise his privilege of conversion at any price for the stock above 91. The prices 70 and 91, therefore, or any similarly corresponding prices, may be called the parity of conversion.

All this will seem obvious to many readers, yet I have found that inexperienced investors rarely understand just how the conversion priv-

ilege works, and even the more experienced are often a little hazy on the subject.

Effect on the Price

As soon as the price of a stock into which a bond is convertible, rises above the conversion figure, the price of the bond follows that of the stock, aside from minor variations. So far as the price is concerned, therefore, the bond holder usually has no object in converting into stock, since the two securities are selling at the same level.

But where the conversion price is above par for the stock, the stock will rise—if it continues to rise—faster than the bond. In the case afore mentioned, for example, convertibility at 130, the bond will always be worth 100-130ths of the price of the stock; therefore the bond will rise only 10 points while the stock rises 13. It is equally true that, above the conversion level, the stock will fall faster than the bond when a period of declining prices sets in. So in such a case the best time to convert the bond into stock depends on the prospect for the price of the stock.

As a rule the investor's reason for converting is that the dividends on the stock give him a better income return than the interest on the bond.

If he believes that this condition will be permanent, he will of course wish to convert.

From the mathematical point of view, a convertible bond should continue to sell at the same price as if it were not convertible until the stock reaches the parity of conversion. From that point upward the bond should follow the stock until the stock falls again below parity, when the bond would no longer be subject to any influence by the price of the stock.

RISE IN SOUTHERN PACIFIC SECURITIES,

October, 1918.

Week Endng:	Stock	Conv. 5s	Conv. 4s	Ref'g 4s
Oct. 12	89 $\frac{3}{4}$	93 $\frac{1}{4}$	80 $\frac{1}{2}$	79 $\frac{1}{8}$
Oct. 19	100 $\frac{3}{8}$	101 $\frac{1}{2}$	84	80 $\frac{3}{4}$
Oct. 27	105 $\frac{3}{4}$	105	85	82 $\frac{1}{8}$
Nov. 2	105	104	84	82 $\frac{1}{2}$
Nov. 9	110	109 $\frac{1}{4}$	87 $\frac{5}{8}$	86

In practice, investors, being similar to other people, are not so strictly logical as this. A convertible privilege which is thought to contain good possibilities for profit through conversion at some time in the future, will nearly always add something to the price of the bond; and as the price of the stock rises towards parity of con-

version, so that the outlook becomes more and more hopeful, the bond will rise in anticipation. The reason is that when the parity of conversion is actually reached only a few bonds could be bought there, and investors realize that if they wish to be sure of getting the bonds they desire they must act in advance of the exact mathematical moment.

We have recently had an excellent illustration of the effects of convertibility in the action of Southern Pacific bonds and stock, as shown in the table herewith.

The prices given are the high quotations for each week on the several securities. The refunding 4s, having no convertible privilege, represent fairly well the trend of the general market for high grade bonds—this having been a period of general advance in the bond market as a whole. The convertible 5s are convertible into stock at par, and the 4s are convertible into stock at 130.

At $93\frac{1}{4}$, in the first week, the 5s gave a yield of about $5.7\frac{1}{8}\%$, while the 4s at $80\frac{1}{2}$ yield 6.5% . There is very little difference in the security of these two convertibles. The relatively higher price of the 5s was chiefly due to a belief on the part of the investors that the conversion privilege was likely to be valuable. And a similar

difference in yields—though not always so wide—had existed for a long time and at much lower prices for both bonds. As soon as the stock reached parity of conversion for the 5s—in this case, equality of price—the bonds rose with the stock.

At $80\frac{1}{2}$ for the convertible 4s, in the first week, the parity of conversion for the stock was $104\frac{1}{2}$; but in the second week, when the stock touched $100\frac{3}{8}$, investors began to anticipate a further rise by buying the convertible 4s, for they rose $3\frac{1}{2}$ points while the refunding 4s rose only $1\frac{5}{8}$. Previous to this time this convertible privilege had been considered of very little value. The 4s were entitled to sell at a yield of 6.5% on their value as bonds, even if they had had no convertibility.

At the high price of the stock, 110, parity of conversion for the 4s was $84\frac{3}{4}$. Therefore at no time during this period was there any advantage in converting the 4s; yet the bond yield on them fell from 6.5% to 5.5% while the yield on the refunding 4s fell only from 5.3% to 4.8%, or half as much.

It is clear that the possibility of future conversion was responsible for about half of the advance in the convertible 4s.

It is sometimes said that convertible bonds of-

fer the only opportunity in investment markets of speculating without risk, since if the stock goes down the bond will not decline below its legitimate value as a bond, while if the stock advances above conversion parity the bond will go with it.

This is substantially true. But it seems to be overlooked that the buyer of the bond has to pay, at least in part, for this privilege, through the lower yield received from his bond. That is, it is not usually possible to get as high a yield from a bond which has any real prospect for a profit through conversion, as can be obtained from an equally good non-convertible bond.

Callable Bonds

Many bonds contain a provision that they may be called for redemption at the option of the company at a specified price, usually somewhere between 100 and 110, and on a certain notice, generally 60 or 90 days. When such a bond sells above the redemption price, the possibility of its being called becomes an element in the value of the bond.

For example, a 6% bond having 50 years to run and selling on a $4\frac{1}{2}\%$ basis, would be

worth, according to the bond tables, about 130. But if it were to be called at par in five years it would be worth $106\frac{1}{2}$. In such a case the investor would have to consider the general position and policy of the company and make his own guess as to whether the bond would be redeemed or not, and if so when.

Redemption of railroad or public utility bonds has been exceedingly rare. These companies have in nearly all cases found a use for all their capital, and since the general level of interest rates has been rising, there has been no inducement to call in outstanding bonds in order to refund by issuing others at a lower rate of interest.

With a long period of falling interest rates, such as is presumably ahead of us now, refunding of this kind may eventually become possible, and the investor will then have to go over his bonds and examine the redemption clauses, most of which are now practically forgotten.

Industrial companies, having been sometimes able to earn much larger profits than rails or public utilities, have at times redeemed their bonds. The Lackawanna Steel Co. has recently been buying in its first consolidated 5s. It has been able to get them in the open market at a much lower price than the redemption figure, which is 105, but in a period of very low interest

rates such a bond might conceivably sell above 105, so that the company would have redeemed the bonds at that price instead of buying them in the market.

Where bonds have an optional maturity—as, for example, the 15-30 year First Liberty Bonds—the rule is to calculate the yield for the longer period if the bond sells below par and for the shorter period if it sells above par; that is, the investor figures on the lowest yield he may have to take. In the case of the numerous bonds which are callable under a special provision it is not customary to consider this in arriving at the yield, but when the price of the bond is above the redemption figure it certainly would be logical to do that, since there would be a manifest advantage to the company in refunding at a lower interest rate.

One disadvantage in callable bonds is that they may be called without the owner noticing the fact. If he is the holder of the ordinary coupon bond the corporation cannot notify him directly, for it has no record of him. It advertises the redemption of the bond, but the advertisement may not come to the attention of the bond owner. The holder of a registered bond will usually be notified by the corporation. The

owner of a coupon bond will in any event discover that his bond has been called when he endeavors to collect his next interest coupon.

CHAPTER XI

LONG TERM VERSUS, SHORT TERM BONDS

In the first chapter of this series I called attention to the fact that even the investor for income alone could not afford to ignore the factor changes in price. There is a broad swing in bond prices and interest yields, from low to high and back to low again, extending over periods of years. At times the decline of prices may be enough to more than equal the interest received, while at other times the advance may be rapid enough to make the "paper" profit which the investor has in his bonds, and can turn into money if he wishes, equal to his interest return from them.

Hardly anybody attempts to speculate in high grade bonds, because their longer price movements are too slow to afford a sufficient inducement, while the shorter movements, although sometimes quicker, are very difficult to predict successfully. Even in second grade bonds there is comparatively little direct speculation. They

are called speculative, not because they are bought and sold to any considerable extent for the express purpose of speculative profit, but because there is an element of speculation or doubt as to their value.

But when it comes to buying bonds for income return, a considerable number of private investors, and to a lesser degree institutions also, try to adapt their purchases to what they believe the future course of prices will be.

When bonds are low it is possible, to a limited extent, to anticipate future income by buying partly on credit. That is, if an investor's income enables him to buy, let us say, \$5,000 worth of bonds annually, he may, at a time when he believes that bond prices are low, buy \$10,000 worth and borrow \$5,000 from his bank, using some of his present holdings for collateral security with the bank. Then as his income comes in, he gradually pays off his bank loan. He has simply anticipated some of his future bond purchases.

On the other hand, when prices are high, if he delays his customary purchases of bonds he will find himself with idle money on hand and the question at once arises as to what use he shall make of this money until he is ready to put it into bonds. The usual answer is to buy short term securities, which will be paid off at par

value by the time he expects to be ready to buy his longer term bonds.

What Maturity is Best?

This brings us to the broad question of selecting the best maturities, or of long term versus short term bonds.

Evidently the ideal arrangement for the investor would be to have all his securities come due and be paid off at the precise moment when bond prices were at the bottom, so that he could reinvest to the best advantage. And when prices are at the top he should seize the opportunity to sell his long term bonds and keep his money all in shorter term securities until such time as bottom prices may again be reached.

Any investor having this extraordinary degree of omniscience would have already acquired such a large fraction of the world's wealth anyway that bond yields would have only a theoretical interest for him; but there is no reason why the average investor should not try to adapt his holdings so far as practicable to the general principle laid down in the preceding paragraph.

Stated more accurately, that principle is that, other things being equal, *the longer the time to run of a bond the wider its price changes will be.*

For example, referring to our bond yield tables or graphs, we see that a 5% bond having one year to run, if it fell from a 3% yield-to-maturity basis to a 10% basis, would drop from about 102 to 95, or seven points; but a 5% bond having 50 years to run would decline, with the same change in the basis of yield, from 152 to 51, or 101 points. This extreme example illustrates the importance of the difference.

Taking an example more within the bounds of probability, the average yield on 20 bonds selected for barometric purposes rose from 4.63% in March, 1917, to 5.76% in November, 1918. This would mean, for a 5% bond due in two years from March, 1917, a fall in price from 100.9 to about 99.8, or 1.1 points; but for the same bond due in 50 years, a drop from 107.4 to 87.3, or 19.9 points. The investor in the two-year bond would get a temporary yield at $4\frac{1}{2}\%$ and would then have his money in hand with which to buy the 50-year bond after its 20-point fall in price.

Accumulation and Dissipation of Capital

The broad changes in the level of bond prices are caused by the accumulation and dissipation of the supply of investment capital in comparison with the demand for it. After a serious panic and

depression of trade, people become cautious, more anxious to save and less ready to spend; so investment capital gradually accumulates and the rate of interest on investments tends to fall. But in time people begin to forget the lesson of the last depression. Little by little they save less and spend more.

There is always a demand for more luxuries, more improvements, more public benefits, than we can pay for, because there is no limit to people's wants. As fast as one want is satisfied another is thought of. So eventually we begin to spend more than we accumulate—either for personal gratifications, or for public improvements, or in starting new business enterprises and broadening out old ones. Capital becomes relatively scarce, corporation borrowers have to pay more for the use of it, and interest rates tend to rise. Eventually the lack of capital begins to handicap business and trade depression results, so that the cycle starts over again.

Besides this general swing, due to the changes in the supply of capital compared with demand, many other elements enter into bond prices. A rise in commodity prices, or the cost of living, tends to create scarcity of capital and higher interest rates, because people then find it more difficult to save. And the wastes of war, as

we have recently seen very plainly, dissipate capital and therefore result in low bond prices.

In the panic of 1873, the average yield on American corporation bonds rose to over 8%, a figure which has never since been approached. We were then in the early stages of modern methods of machine production, and business enterprises could afford to pay a high rate for funds, and to this factor was added a panic of unusual severity.

By 1889 this average yield had fallen to about 4%, but the panic of 1893 carried it back to $5\frac{1}{4}\%$. During the trade depression which followed—partly due to political uncertainties—there was a great accumulation of capital and by 1899 the average bond yield was down to $3\frac{3}{4}\%$, the lowest average ever reached in the Western Hemisphere. The panic of 1907 carried the figure up to $4\frac{3}{4}\%$, and after a reaction until 1909 the European War caused an advance to over 5% in 1915, and our own participation in the war resulted in a further rise to $5\frac{3}{4}\%$ in October, 1918. Peace brought the quickest and sharpest fall in bond yields ever recorded in this country, so that by December, 1918, the average was around $5\frac{1}{4}\%$.

No one is able to predict the future drift of bond prices with any great accuracy. But when

high grade bonds are yielding close to 6%, as they were a few months ago, one does not need to be a soothsayer to predict that the next big movement of bond prices must be upward; and on the other hand when many issues are yielding only $3\frac{1}{2}\%$, as in 1899, it is a fair supposition that sooner or later they can be bought cheaper.

Moreover, in selecting long or short term maturities according to his judgment of the bond situation the investor is not, like the stock speculator, taking a risk. He will not buy a bond of any maturity unless he believes it to be safe, and he knows in advance just what yearly income he will get from it. So his choice of a long or short maturity is merely a question of using his best intelligence in avoiding any temporary decline in the price of his security between purchase and maturity, or getting the benefit of any advance.

In a word, either the long term or the short term bond will be good, if judiciously selected, but one may be better than the other. If the buyer's judgment as to which is the better turns out to have been wrong, he still has a good bond.

Since there are many preferred stocks which are really entitled to just as high an investment rating as bonds, it may be well to call attention here to the fact that so far as price changes are concerned the preferred stock which is assured of

its dividends is equivalent to a bond of unlimited maturity. Its change of price in any broad shift in the general level of interest rates will be somewhat wider than even the longest term bond.

We noted that a 5% 50-year bond, in changing from a 3% basis to a 10% basis, would fall from 152 to 51; but a 5% preferred stock would fall from 166 $\frac{2}{3}$ to 50. So at a time of high interest rates—like the present—the best preferred stocks have a prospect for an even greater advance than long term bonds.

It might be thought that, at a time when investors generally believe that bond prices are low, so many of them would choose long term bonds that 20 to 50 year bonds would sell higher relatively than 5 year bonds; but it would be hard to prove that theory from a study of prices. The yield on one, two or three year notes is often affected by investors' views as to the future of prices, but when it comes to maturities of 5 years and upward investors judge by the bond yields almost entirely, so that a 50-year bond can usually be bought on about the same basis as an equally good 5-year bond. Therefore the exceptional investor who is looking into the future has every opportunity to exercise whatever wits he may have.

CHAPTER XII

BONDS, MONEY RATES AND THE PRICE OF CAPITAL

Everyone knows that bond prices are intimately connected with money rates and the cost of capital, but it is hard to get from even the most astute banker or bond man any coherent idea of just what the connection is and how it works.

One of the principal obstacles to an understanding of this subject is in the fact that the term "money," as commonly used, has two very different significations. One of my friends complains that he always gets a headache when he begins to think about the problems of the money market. The principal cause of his confusion is the failure to distinguish between these two uses of the word money. And it is likewise true that "capital" is used in two quite different ways. The first essential, therefore, is to clear up these fruitful causes of misunderstanding.

The primary meaning of money is currency—gold, silver, or paper. This is the kind of money that we carry in our pockets or the tradesman

has in his cash drawers or the bank in its vaults. But suppose you take \$1,000 in cash and deposit it in your bank. You say that you have that much "money" in the bank because you can draw it out in the form of cash if you want to; but the bank does not keep it in the form of cash—gold, silver or paper—but merely carries a credit of that amount to your account. What you really have with the bank is a **credit balance**.

In that way arises the secondary or derived meaning of the term "money," that is, a credit which is available at once or within a comparatively short time. The "money market" is really a credit market. Even if a bank check is not money in its primary meaning; it is merely a written evidence of a credit at the bank, which can be transferred from one person to another by indorsement.

There have been times—and even as recently as 1907—when a scarcity of actual cash has caused a tight money market. Even under our new Federal Reserve bank law scarcity of currency would result, in a roundabout way, in rising money rates. But under any ordinary conditions the "money rate" means the interest rate on short term credits, such as call loans, time loans, running from one to six months,

and commercial paper, which may run for a year or even longer.

We must distinguish, therefore, between "easy money," which means easy short-term credit, and an abundance of currency in circulation. The two naturally influence each other, but they are far from being the same. And when we speak of the influence of the money rate on bond prices, we really mean the interest rate on short credits.

Economists use the word capital to mean all wealth which is being used to produce more wealth. (They quarrel somewhat over details, but that is the general signification of the term.) In that sense factories, supplies of materials, machinery, even the improvements on farm lands and the food which sustains the factory worker, are included in "capital."

But the investor and the business man use the word capital to mean what economists sometimes call the "capital fund," that is, that part of economic capital which is in a sufficiently liquid form so that it can be made available for the purchase of securities or for use as credit in business, provided that its owner sees fit to apply it in that way.

This fund of capital is being constantly added to by the savings of the people and the profits

of business men, and as constantly reduced by the flow of capital into new enterprises or into the broadening and developement of old ones. Thus this capital fund passes through four stages:

1. It is accumulated out of savings or profits.
2. It is deposited in a bank, thus appearing in the form of bank credit.
3. It is invested in bonds, stocks, notes, or mortgages.

4. The companies or individuals issuing these securities turn the capital into concrete forms, or economic capital. That is, they use it to build factories, buy machinery, purchase a stock of goods, or what not.

A point to be noted here is that a bank itself may, by extension of its credit, increase the fund of capital investment securities. We have recently had a notable example of this in connection with the sale of Liberty Bonds. But unless there is a change in the laws under which the banks operate, so as to permit a permanent extension of their credit, such an increase in the capital fund must be made temporary. It is something like a man lifting himself by his bootstraps—he may jump up a couple of feet, but in order to get solid ground to stand on he has to come down again.

In discussing bonds, then, we speak of the

money market as representing the interest rate on short term credit, and of capital as the fund of capital available for investment.

Effect on Money Rates

A change in the rate of interest on call loans has practically no effect on bond prices, because almost no holders of bonds carry them with money borrowed on call. It is the broader swings of the money rate, extending over several years, which begin to show some effect on bond prices. For this purpose, the best index is the rate on prime commercial paper, which changes slowly, and yet is fairly representative of general money conditions.

The long swings of the rate for commercial paper at New York in recent years have been marked off by the following high and low points:

High, September, 1903	6½%
Low, July, 1904	3¾%
High, November, 1907	8%
Low, August, 1909.....	3⅝%
High, September, 1910	6%
Low, May, 1911	3⅝%
High, August, 1913	6⅛%
Low April, 1914	3¾%

High, September, 1914	6¾%
Low, February, 1916	3%
High, March to December, 1918.....	6%

After July, 1914, the rate was much influenced by the war and by the new bank system. The high rates of September, 1914, were solely due to fear and did not represent a normal swing of the market. In 1918 the rate would have gone above 6% if it had not been held down to that figure by the government, acting through the Federal Board.

Under normal conditions the lowest prices for bonds—or the highest bond yields—correspond pretty closely with the highest money rates, as would naturally be expected. Thus bond prices were at the bottom in September, 1903, and in November, 1907. In August and September, 1910, bonds were lower than they were again for two years, although during that period they failed to record any great advance. Again, bonds were practically at the bottom when money touched 6¾% in the fall of 1914, although the fact that the Stock Exchange was closed prevented a normal market at that time. And presumably bonds were again practically at the bottom in the fall of 1918, when the Government was holding

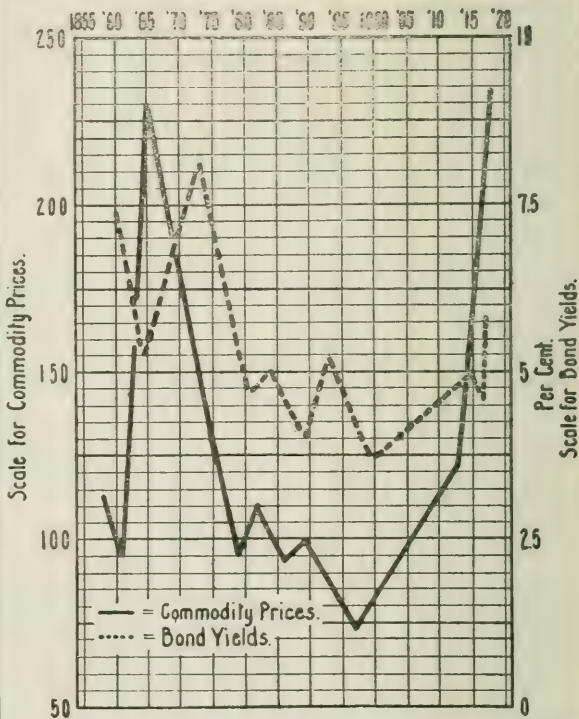
the money rate at 6% by main force.*

The opposite is true in a general way, that the highest bond prices are made during periods of low money rates, but there is no such close correspondence here as in the case of high money rates and low bond prices. A period of low money rates generally lasts for a year or more, and is of much less practical help to the investor as a guide to the bond prices.

The reason for the correspondence between high bond yields and high money rates, low bond yields and low money rates, is perfectly clear, since both are dependent on the amount of capital available at any time for investment. And it makes very little difference whether the fund of capital thus available is the result of savings and profits, or the creation of bank credit. The latter, for the time being, is just as effective in the purchase of securities as capital which has come from the savings of the people.

The chief value of money as a guide to bond prices lies in the fact that the high and low limits of money rates are more easily distinguished than the high and low points of bond prices. Money rates indicates what might be called the "minor

*NOTE—The relative movements of bonds and the money rate are well shown on a graph in "Tidal Swings of the Stock Market," by Scribner Browne, published by The Magazine of Wall Street.



swings" of bond prices, which occur merely as temporary incidents in a much longer swing of bond prices over a period of decades.

For example, 6% money in 1903 corresponded with a low point of about 100 for the average of ten high grade bonds; but in 1918 6% money coincided with a low point of about 79 for a similiar average. The investor can form a much closer judgment as to when money rates are approaching their high or low points than he can as to the high and low prices of bonds.

The thought will occur to many readers that a historical study of the relation between money rates and bond prices for a much longer period, say half a century, would be of interest. It is of interest but does not afford as much practical help as might at first be imagined. THE MAGAZINE OF WALL STREET has recently compiled money rates for the best commercial paper from 1840 to 1870—a burdensome task which seems never to have been undertaken before.*

The result is startling. Previous to the Civil War rates rose nearly every fall to high figures—18% in 1847, 1851 and 1854, (and 36% in 1857). In 1861, when the Civil War began, 36% was touched, and in the panic of 1873, 24%.

*See "A Century of Prices," by Ex-Senator Theodore E. Burton and G. C. Selden.

Even at a much later date, a 10% rate was reached in 1890, and 12% in 1893 and 1896. As to still earlier dates, it is impossible to compile complete figures; but there were considerable periods in 1837 and 1839 when commercial borrowing was actually impossible at any rate of interest.

The Long Cycles in Bond Prices

The longer swings in bond prices, which sometimes establish a general trend in one direction for a quarter of a century, are chiefly due to the rise and fall of commodity prices.

In considering these very long swings it is impracticable to use an average of bond prices, since the bonds will be constantly maturing and others will be issued to take their places. It is necessary to compile the average of bond *yields*.† Without going too much into this interesting theoretical problem, I include herewith a condensed graph showing the degree of correspondence between the two factors. It will be seen that the line of bond yields is generally a few years behind commodity prices in making the turns.

†This useful task has been performed by the Babson Statistical Organization.

This makes the graph of special interest, since in a very broad way commodity prices may be said to forecast the swing of bond prices .

The reason for this correspondence lies in a principle frequently commented upon by Prof. Fisher and others. With rising commodity prices, the investors' annual bond interest will buy fewer and fewer goods. It's money-value remains the same but its good-value keeps falling because of the decline in the purchasing power of money. Investors, therefore, begin to look around for higher yield securities. So bond yields soon begin to follow commodity prices in their upward movement. And the reverse is true when commodity prices fall.

CHAPTER XIII

FACTORS IN THE LONG SWINGS OF BOND PRICES

In connection with the other subjects I have necessarily referred several times to the principal factors causing changes in the general level of bond prices. But in order to give an adequate and comprehensive view of these various influences and of the way in which they combine to produce the wide changes in bond prices which often appear, it is desirable to identify them more carefully and to weave them together into a long range perspective.

There are three influences causing these broad movements of the bond market as a whole. All three may work in harmony, in which case they naturally have the most powerful effect, or one may be working in opposition to the other two, so that to some extent they neutralize one another.

There is a great difference in the length of the swings created by each of the three factors, or to be more accurate, the length of the

swings that would be created by any one of them working alone. One of them has what might be called a "normal cycle" of three or four years, another of something like twenty years, and a third probably has no regular cyclical movement—at least I see no reason to think it has.

Experienced investors will at once recognize the fact that each of the three influences is in evidence at one time or another, but as to how they interlace or the length of time over which each one operates practically nothing has been written.

In considering long periods of time it is necessary to deal with average bond *yields* rather than with prices. It will of course be understood that the movement of prices is exactly opposite to that of yields.

The Three Factors in the Long Swings

(1) Changes in the general level of commodity prices, referred to briefly in the last article, which create the longest swing in bond yields.

(2) The Major Trade Cycle, which usually covers a period approximating twenty years.

(3) The Minor Cycle, which depends on the accumulation and dissipation of liquid capital,

and generally covers three or four years.

Taking up the first, we have already seen that bond yields follow the rise and fall of commodity prices in a rather remarkable way, usually being a few years behind them in making the turns, and the reason has also been explained.

The broad movements of commodity prices extend over very long periods. The general tendency of English prices, for example, was downward from 1809 to 1869, although there was what might be called a prolonged rally from 1850 to 1873. In the United States prices declined pretty steadily from 1866 to 1897, and advanced from 1897 to 1918 with hardly a reaction.

In general, bond yields fall with falling commodity prices and rise with rising commodities—but not, however, to the same extent; that is, if commodity prices double that does not necessarily mean that bond yields would double. The broad trend is in the same direction but it may proceed more slowly or more rapidly.

This is, of course, because bond yields are influenced by other factors also. For example, everyone is familiar with the fact that interest rates in newly settled or undeveloped countries or sections are higher than in older communities. So the gradual settlement and industrial and agri-

cultural development of the United States has in itself been a potent cause of lower bond yields.

Again, the average yield on our corporation bonds today is lower than the average yield of half a century ago, partly because of the greater solidity and trustworthiness of our modern corporations. The bonds by which we measure yields now are really better bonds than those which we have to use in measuring the yields of fifty years ago, and this fact shows up in the form of lower yields.

These extremely long-pull factors,, together with the effects of the Major and Minor Cycles mentioned above, prevent any exact correspondence between the *extent* of a rise or fall in commodity prices and the *extent* of the almost simultaneous rise or fall in bond yields. But the similarity in the trend of the two very marked.

Influence of the Major Cycle

Major trade cycles in the United States have been divided or marked off by the panics of 1857, 1873, 1893 and 1914. In such panics bond yields rise sharply, although temporarily, while in the intermediate periods of prosperity bond yields fall. In this way a sort of secondary swing in bond yields is created which is within

and subordinate to the longer swings caused chiefly by changes in the level of commodity prices.

Owing to the limited number of corporation bonds and the imperfect records available it is impossible to arrive at a satisfactory average of bond yields in the panic of 1857, but it was doubtless 8% or higher. In later years the high and low points of each cycle were approximately as follows.

18578.0% (?)	18894.0%
18645.3%	18933.7%
18738.1%	19013.7%
	1914.....5.0%		

After 1914 the colossal expenditures of the war overwhelmed the normal cyclical movement, so that instead of falling as would naturally have been expected, bond yields rose to nearly 5.8% in 1918—this movement being simultaneous with the doubling of commodity prices, also due to the war.

The effect of the Major Cycle is of considerable importance. It will be noted, for example, that the average bond yield rose from 4% in 1889 to 5.2% in 1893, an important change for the brief space of four years. Yet at that time the broad tendency of commodity prices was downward, which tended to influence bond yields to-

ward a lower figure rather than a higher, and there were no serious wars to unsettle values.

The Minor Cycle

Since 1893, at any rate, there has been rather plainly visible a minor cycle of industrial activity, reflected in stock prices and to a less extent in bond yields, covering a period of three or four years in each case. The years of low prices (or high bond yields) have been as follows: 1893, 1896, 1900, 1903, 1907, 1910, 1914.

In all these years except 1900 and 1910 the rise in bond yields is quite plainly visible, although much less important than the effect of the Major Cycle. The year 1900 came in the boom period of the Major Cycle, so that the influence of the Minor Cycle was to a great extent, though not entirely, neutralized. In 1910 bond yields rose, but they did not fall between 1910 and 1914—the influence of both the Major Cycle and the strong rising trend of commodity prices being then opposed to a fall in bond yields.

It should be noted that the three factors in bond yields just discussed are the *principal* influences, not by any means the *only* ones. Almost any sort of economic, financial, or political development may have some influence on bonds. But these in-

fluences are usually minor, temporary and irregular. They can hardly be reduced to the status of principles, while these three main factors can be so reduced.

The investor will find his ideas considerably clarified, in any examination of the trend of bond prices, by keeping in mind the varying effects of these three influences and observing whether they are acting in harmony or in opposition.

To discuss adequately the entire subject of Major and Minor Cycles and changes in commodity prices would carry us far outside the field covered by these articles, but investors should at least have in mind the broad principles by which bonds are related to the general question of business, activity and prices.

CHAPTER XIV

FACTORS AFFECTING THE VALUE OF SECOND-GRADE AND SPECULATIVE ISSUES

In the last three chapters a number of factors have been mentioned affecting the general movements of bond prices, such as the accumulation and dissipation of capital over long periods, the price of capital, money rates, changes in the general level of commodity prices, and the Major and Minor Trade Cycles.

Something further needs to be said, however, in regard to the extent to which these various influences affect the three classes of bonds—high grade, second grade, and speculative (see classification in Chapter VII). There are also other factors which affect especially the second-grade and speculative issues.

Money Rates and Low-Grade Securities

If a bond is so high-grade—that is, if it is so

abundantly protected by earnings and assets—that payment of its interest and principal is certain, there is then no logical reason why its price should be influenced by *any other factor* except changes in the general rate of interest obtainable for the use of capital. This factor would include the price of investment capital, the money rate (since some bonds are carried on borrowed money), and broad changes in the level of commodity prices which soon affect the price of investment capital.

With such a bond, everything affecting earnings and assets should logically be ignored, since we have assumed that interest and principal are certain to be paid. The rate of interest and date of maturity of the bond being fixed, there is nothing to affect the price except the relation of the bond's yield to the return that can be obtained from other investments.

On the other hand, if we drop down the scale in the grades of securities until we reach a bond on which the interest is in default and likely to be for some years to come, and whose owner has paid for it in full, we find no logical reason why the price of that bond should be influenced in the least by the general rate of interest. Its price should depend entirely upon the asset behind it and upon the prospect for the rehabilitation of the company. It pays no interest, and if its owner is

not paying interest for money to carry it, the whole question of rates of interest is eliminated.

In between these two extreme grades of bonds, both factors—changes in the general rate of interest and changes in the earnings and outlook for the company—will operate in varying degrees, according to the grade of the security under consideration. The higher the grade of the bond the greater will be the effect of the general interest rate on its price, and the smaller the effect of the earnings and prospects of the company; the lower the grade, the smaller the effect of the interest rate and the greater the effect of the company's prospects.

I have said that *logically* these extreme high and low grade of bonds should be influenced only by the factors mentioned. But since most investors are not strictly logical, even the best bonds are likely to sympathize slightly with the general movements of the bond market. And low grade bonds not only sympathize in a similar way, but often some of them are being carried on borrowed money, so that the money rate affects them in that way.

Broadly, however, we may say that low-grade bonds are affected chiefly by the rate of interest on investment capital, low-grade bonds chiefly by the prospects of the company issuing them, and

second-grade or intermediate bonds partly by one factor and partly by the other.

Effect on Trade Conditions

When we come to changes in the general condition of trade, we find that they affect high-grade bonds almost solely through the influence of business activity upon interest rates; but they affect second and low-grade bonds not only in that way but also through the influence of business activity upon the earnings of the companies.

A good illustration is found in the recent action of the U. S. Realty & Improvement 5s. In March 1918, these bonds, although of short maturity (1924) and paying their coupons regularly, sold at 45, making their yield to maturity around 20% annually. A year later they sold at 74.

Manifestly the general rate of interest on capital had nothing to do with this change. The current money rate had some influence, since many of them were carried on borrowed money. But most of the advance in price was due to the great change in the renting, construction and real estate outlook in New York.

The influence of the Minor Trade Cycle on the prices of second-grade and speculative bonds

is especially important—so important, in fact, that these bonds should rarely if ever be bought for permanent investment at a time of great business prosperity throughout the country, since at these times their prices are almost certain to be relatively high.

Second and lower grade bonds sympathize strongly with the general movements of the stock market. Examine any chart of stock prices over a period of a dozen or more years and you will see that the market has a fairly regular swing from low to high and back again. This is the "Minor Cycle" as reflected in stock prices. It is highly desirable to select your second-grade and speculative bonds during that period of the cycle when prices are at a low level.

When the next era of high prices comes it may be that second-grade bonds will have graduated into the first-grade class, in which case they might be held or not, according to the general bond prospect. But in case they are still second-grade or speculative, it is best to take advantage of the high price level to shift funds into high-grade bonds or short-term notes, since the investor is very likely to have an opportunity a year or two later to buy back the lower grade issues at considerably lower prices.

These swings are often pretty wide. In the

panic of 1907 bonds of this class suffered severely. Or to take later illustrations, the Frisco adjustment 6s sold at $89\frac{1}{2}$ late in 1916 and at $53\frac{1}{4}$ about a year later while the Seaboard adjustment 5s sold at 68 early in 1917 and at 42 in the latter part of the same year. Chesapeake & Ohio convertible $4\frac{1}{2}$ s, analyzed briefly in a previous chapter, sold at $86\frac{1}{2}$ early in 1917 and at $65\frac{1}{2}$ in December of that year, in spite of the road's excellent prospects and earnings, which had their due effect in a rebound to $85\frac{1}{2}$ in November, 1918.

The best opportunity for the exercise of skill in the choice of bonds that will grow in value as well as pay a good interest, comes after the downward swing of the Minor Cycle, when liquidation in the stock market is nearly over and liquidation in general business is well under way. At such times there are always a good many second-grade and speculative bonds which have fallen sharply and which at the moment are not very strongly protected by earnings, but which have behind them progressive, expanding companies.

Such companies are not necessarily new ones, although in many cases they will be. A company of long standing may often meet unfavorable factors in its business which temporarily reduce

its earnings, and still be well able to "come back" strongly in the next period of improving general trade. And there are lines of business in which earnings always fluctuate sharply, being large in good times and small in dull times. This is especially true of companies whose business is identified with new construction, since construction comes pretty much to a standstill in periods of depression.

Selecting Bond Bargains

The investor may be sure, in times of dull business, that *some* bonds of this class are going to advance very sharply when conditions improve. The difficulty lies in picking these bonds out. To do that successfully he needs all the information he can get, and the more he knows about the principles of investment, the past earnings and the present position of different companies, and the outlook in different lines of business, the better his selections are likely to be.

He should begin by compiling a list of high yield bonds—those, for example, yielding more than $6\frac{1}{2}\%$ —which are quoted on the stock exchanges or curb markets of the country, or if unlisted, have a fair market over the counter. He should next examine the income accounts and

balance sheets for the last ten years of the companies issuing these bonds, to see what earnings have been available for bonds, how and why earnings have risen and fallen, what part of the earnings have been used for the improvement and expansion of the business and what part has been charged off to keep up maintenance, reserve, funds, etc. If he distrusts his ability to do this he can easily get assistance from THE MAGAZINE OF WALL STREET or other sources.

In the case of the new companies this information will not run back ten years, and for that very reason the bonds of the new companies are likely to be better bargains than the older bonds, provided trustworthy information can be obtained about them.

He will next consider the character of the company's management, its financial connections and its general efficiency in handling its business. But he should not allow himself to be overawed by influential banking affiliations alone. These are highly desirable, but many a company thus backed has gone on the rocks nevertheless.

Then he will pass to the consideration of the prospects for activity in the line of business the company follows. This is a question of information and judgement.

All this, of course, is not easy—if it were we

might all be millionaires. But on the other hand it requires no special qualifications beyond an ordinary knowledge of bookkeeping methods, a willingness to keep posted and to observe very closely, independence enough to ignore the crowd, and faith enough to follow one's own conclusions.

Most investors find it easier to pick growing bonds than growing stocks, as they are not so much at the mercy of the conflicting winds of temporary speculative influences.

Some knowledge of the customary behavior of the Minor Cycle is essential. That would take us outside the field of these articles. An excellent book on the subject is "Tidal Swings of the Stock Market," by Scribner Browne.

CHAPTER XV

DISTRIBUTION OF BOND PURCHASES

A great deal has been said and written about the diversification of investments, yet many still have a wrong idea of the real meaning of the term.

What is the object to be gained in buying half a dozen or a dozen different bonds instead of putting all your money into the one bond which appeals to you most strongly? Evidently the distribution of *risk*. Since you do not claim to be infallible, your judgment in regard to that one favorite bond might turn out to be wrong, while if you buy ten different bonds, all of which seem to you to be safe and to have good prospects for the future, the chance of your being wrong on all ten of them is very small.

Now there are two reasons why a bond investment may go wrong:

(1) Dishonest or inefficient management of the company.

(2) Bad conditions in the line of business in which the company is engaged.

Those are the two kinds of risk the investor must run; so any diversification of investment

should be made with both these risks in mind.

It is not uncommon for a bond house to make up a so-called diversified list of investments which is entirely composed of different kinds of railroad bonds. There is a wide variety in railroad bonds, not only in grade but in character, maturities, section of the country covered, nature of traffic, etc. Nevertheless, such a list cannot be properly called a well-distributed investment, because it is confined to one general line of business.

For example, any one who examines the recent course of the average prices of different classes of bonds will see that railroad bonds have declined more in proportion than industrial bonds. We can hardly assume that the investor could foresee the special conditions that have worked against the railroads and in favor of the industrials. But one thing he could easily do—he could spread his investment over both classes. And if his selection of bonds does not cover more than one line of business it is not genuinely diversified.

Different Yields Not Enough

I see very little advantage in spreading an in-

vestment over high yield and low yield bonds, all of which may be adversely affected by the same set of conditions. This is often done with the idea that the high grade low yield bonds will be safe in any case, even though some of the low grade bonds may go wrong.

But in Chapter III, I brought out the fact that the risk in high grade bonds is usually greater *in proportion to interest yield* than the risk in lower grade bonds—that the higher grades of bonds sell higher in comparison with their real value than the lower grades.

It is more logical, therefore, to obtain a wider distribution over high yield bonds in place of a narrower distribution which includes the highest grade bonds. That, is the total net results will be better in buying 30 bonds yielding 7% than in buying 10 bonds which yield 5%, 6% and 7%. Where the investment is widely distributed, the additional yield from the 7% bonds more than compensates for possible loss on one or two of them.

The real point of distribution, as I see it, applies not to differing yields but to diversification in the character of the securities, their maturities, and the lines of business in which they are engaged.

A Well Distributed High Yield Investment

The table herewith gives a well distributed high yield investment covering ten issues. No two of the bonds are in the same or related industries, except that two railroad bonds are included, one Eastern and one Western, and having a very different character of traffic. Maturities vary widely, and the average yield is only a shade less than 7%. The Liberty 4½s are included not only because every investment list should embrace some U. S. government issues, but also because they are certain to rise in price. Moreover, they are exempt from normal income taxes, which means entirely exempt for many investors.

Against most of these bonds the ultra-conservative investor would raise objections. He would perhaps say that Chile Copper is still in the development stage; that the Frisco has only recently been organized, so that its bonds have not yet become seasoned; that the German stamped Japanese bonds cannot be sold in London, and that Japan may get into trouble with China, Russia, or the United States; that Bethlehem Steel has issued too much new capitalization recently; that oil bonds are risky because the oil may give out any time; that International Agri-

cultural's past earnings have not been stable; that American Telephone is now under Government control and may stay there; that Chesapeake & Ohio 4½s lack satisfactory mortgage liens; and that Republic Motor Truck is a comparatively new undertaking, which has not yet proved its permanent earning power.

	Maturity	Current Yield
Chile Copper 6s.....	1932	7.75%
St.Louis and San. F. prior lien 4s..	1950	7.30
Japanese 4½s, German stp.....	1925	6.90
Beth Steel pur. & imp. 5s.....	1936	6.50
Pierce Oil ..6s.....	1924	8.25
International Agricul. 5s.....	1932	7.00
American Tel. & Tel. 6s.....	1925	6.10
U. S. Liberty 4th 4¼s.....	1933-38	4.75
Chesa. & Ohio conv. 4½s.....	1930	7.30
Republic Motor Truck 7s.....	1923	7.60

Average yield.....6.95

All of these objections are outweighed, in my mind, by other considerations, most of which are based on the actual earnings of the companies. However, my object here is not to analyze the investment standing of these particular bonds, but to bring out the principles involved; and it is exactly because the above objections or others similar can be raised against these bonds, that they afford a relatively high yield.

Usually a Reason for High Yields

Occasionally an extra high yield is due to some special circumstances. For example, the Pierce Oil 6s are to be paid off at 105 at maturity. Most investors did not notice this, and even some statisticians supposed to be well informed figure this yield on the basis of redemption at 100. All oil bonds should be of early maturity, because of exhaustion of territory, and these mature in five years. So an additional five points at maturity means nearly one per cent. additional yield annually.

Sometimes, also, somebody wants to liquidate a large amount of a bond which has only a small market. This may result in its being offered considerably below its natural value for a time.

But in general an extra high yield has some reason behind it which has at least a superficial weight. The object of the alert investor is to see whether that superficial appearance has a sound basis behind it, or whether it rests only upon the prejudices of investors, or upon mistaken impressions, or—and this covers by far the largest number of cases—upon conclusions derived from the past instead of from the present and future of the company under consideration.

The price of a bond is usually slow in responding to changes in the earnings and prospects of the company issuing it. The stock speculator tries to foresee and anticipate these changes—an effort on his part which brings in its train all the curiously involved phenomena of active speculation. But bonds are too slow for him. He generally leaves them to investors, and most investors are in the habit of waiting until they are sure, and then waiting another year to allow their views to get seasoned, and perhaps waiting another year to see whether the market responds to what they believe to be the situation.

So when a company is on the down grade its bonds follow very tardily, and when it starts to go up its bonds lag behind. When a wide awake investor sees a bond which gives a relatively high yield, his task is to find out whether its low price is due to permanent reasons or merely to the fact that the bond has not caught up with the real condition and prospects of the company.

Where Diversification Begins

It is only after he has finished this examination and has reached his conclusions that the question of distribution arises. He finds certain bonds which give a good return and yet seem to

him to be as safe as anything is in an essentially unsafe world. But just because the world is essentially unsafe he realizes that he cannot possibly foresee everything that might happen to those companies.

In many fraternal organizations the members protect themselves against loss of salary and expenses during illness, by mutual insurance. If one member is ill he draws upon a fund which has been contributed by all the members together. The risk of illness is distributed over the whole organization.

Similarly the investor should distribute his funds so that illness in the steel industry may fall upon the funds contributed by the copper industry, the railroads, fertilizers, the U. S. Government, foreign governments, cotton and woolen mills, and so on. He cannot be positive that none of his bonds will ever be ill, but he can organize them into a mutual insurance company.

One other point in this matter of diversification needs to be emphasized. The distribution of his funds over ten, twenty or thirty different bonds should not lead the investor to include any bond which does not strongly appeal to him on its individual merits. He should not excuse himself for taking a chance by saying, "Well, after all, this is only one-thirtieth of my investment."

On the contrary, he should be able to say in regard to each bond, "I believe this bond is adequately protected and that its good yield is due to the fact that it is selling below its real value. The only reason I confine my investment in it to one-thirtieth of my capital is the inevitable mutability of human affairs.

CHAPTER XVI

THE PERSONAL ELEMENT IN BOND BUYING

In preceding chapters we have been considering bonds from the objective point of view—the value of one bond as compared with others, the degree of risk involved in owning different kinds of bonds, the possibilities of growth in value, the reasons why a bond may sell above or below its real value, etc.

Something, however, should be said about bonds from the subjective viewpoint, or the personal element in bond buying. A bond which may very properly constitute one-fiftieth of the investment capital of a business man whose salary is \$10,000 a year, might be a very improper investment for the clergyman's widow whose whole fortune is \$1,129.76. A bond giving an income yield of 15% might sometimes be carried for a time with comparative safety and even with an additional profit by a man in a position to keep close watch on the company and its prospects, but would be quite unsuitable for a professor of archaeology starting on a six month's trip to Egypt.

Investors Classified

For this reason bond men have fallen into the habit of roughly classifying investors as well as investments. They speak of "the investor for income," meaning one who cares little or nothing about the price changes so long as his income and principal are secure; the "business man's investment," or one which gives a relatively high yield but may require a little intelligent watching, or may involve a somewhat higher percentage of risk than the "simon-pure" investor would care to take; "the speculative investor," which may mean an investor who seeks both income and profit, or may be merely a euphonious term for the long-pull speculator; and the "woman's investment"—an inadequate term because it seems to imply that all women need investments of a uniform type, which is by no means the case.

There is a certain value in these terms, just as there is in any nomenclature which helps us to understand each other a little more definitely than we otherwise could; but all these classes merge into one another and all these investors have the same three things in mind—safety, income, and getting a profit or avoiding a loss—although they place different degrees of weight on each of the three factors.

Before buying any securities the investor needs to consider carefully his position. He should ask himself such questions as these.

In what position would it leave me if this investment should turn out a total loss?

Could I stand a heavy, temporary, depreciation in its value?

Is this investment a side issue with me, or am I dependent upon it for a part of my necessary income?

What part of my total property am I warranted in placing in this security?

If this investment should turn out badly, how would it affect others who are dependent on me?

Is my position such as to warrant me in taking a speculative risk? If so, how great a risk? And on how large an amount?

If I am warranted in taking a moderate degree of risk in the expectation of a larger income and perhaps some profit, have I carefully calculated the risk involved in this particular investment? Have I obtained all possible information about it? Is the amount I propose to place in it too large compared to the risk?

Risks Cannot Be Ignored

Those who have securities to sell do not as a rule have much to say about risks. It would be

expecting too much of poor human nature to ask the seller to emphasize the possibilities of loss to the buyer of the goods. But that is just the reason why the buyer should never forget the risk. *Caveat emptor* is not such an important doctrine in the law of today as it was when the Romans originated the phrase, but it still has much force, and each one of us can readily supply illustrations of that fact from his own experience.

We know now what we did not know in 1914, that when the Germans were battering at the gates of Paris there was a per cent of risk even in United States bonds—a very small per cent but a real one. If that risk was one-tenth of one per cent, then we may calculate that the risk in other securities varies from that figure up to perhaps 99.9½% on such a stock as Emerson Motor, or other similar promotions where almost the entire business of the company consists in selling stock to a too credulous public.

The risk attached to many bonds may seem to be negligible, but even if that is true there is no reason why the investor should not further reduce it by distributing his purchases over a number of different securities; and where the yield is high enough to indicate that most investors rate the bond as below the highest grade, it should be assumed that risk is involved and the relation of that

risk to the personal position of the investor should be carefully considered.

The bond man meets many points of view in this matter of risk. Sometimes a prospective investor having very small resources will say, "I want something that does not involve any risk. I can't afford to speculate." The bond man cannot meet this requirement. Perhaps he suggests a \$100 savings bank bond yielding 5%. But this customer would really be better off without any increase in risk, if he bought ten \$100 bonds with an average yield of perhaps 6%. (These yields refer, of course, to the current market. They may be very different ten years from now.)

On the other hand, another investor whose resources are likewise very small, will argue in this way: "I must have a larger income. I haven't money enough to depend on 4% or 5% a year. I must get hold of something cheap, but which is growing and will be worth a great deal more in a year or two from now. Anyway, I haven't much to lose." The bond man protests against his point of view, but probably has to end by referring the investor to the stock department.

In this way the same condition—limited resources and income—appears to different persons as an argument for exactly opposite investment policies.

The Small Investor

Bond men usually advise the small investor to be ultra-conservative, because he can't afford to lose. If the millionaire were to lose three-quarters of his wealth he would still have enough left to protect him from want, but this might not be true of the impecunious widow who lost three quarters of her property.

On examination, however, the main point of this argument is found to be that the widow should not gamble, while the millionaire can afford that sport if he enjoys it. As applied to legitimate investments in bonds, containing only such reasonable risks as are commonly accepted by the great majority of bond investors, exactly the same principles apply to the placing of a small sum of money as to a large sum. The difference lies, not in the amount to be invested, but the personal position of the investor.

One who is directly dependent on the income from his investments should take less risk than one who has a sufficient income from his business or profession. An elderly man, whose earning period is drawing to a close, should be more conservative in his bond buying than a man in the thirties whose biggest earning period is probably ahead of him. A man having a family dependent

upon him must be more cautious than one who has only himself to take care of. A woman without special training, whose earning power is presumably small, should take less risk than the salaried woman. A very young man whose judgment is as yet undeveloped should be more conservative than the man of mature business experience, and so on.

But in this matter no man can lay down rules for the other man to follow, because so much depends on temperament and on purpose in life. One man detests uncertainty. If he owns a 7% bond which declines three points, he lies awake nights. Another hugely enjoys the intellectual diversion of trying to buy the 7% bond *after* it has declined the three points and as near the bottom price as he can guess. These two men need different prescriptions. It is useless to try to fit them both to the same set of rules.

One man's purpose in life is to accumulate wealth as rapidly as possible. Another's purpose is to help reformed criminals to get a new start. Another is chiefly interested in studying the evolution of the angle-worm. Still another wants merely to live quietly and happily and accumulate enough to safeguard his family in his old age.

These men require different kinds of investments and with only a working knowledge can lay down the broad lines they wish to follow.

A BRIEF BOND DICTIONARY WITH SPECIAL REFERENCE TO LIBERTY BONDS

Accrued Interest—Interest on bonds is paid at fixed intervals—in the case of Liberty Bonds, every six months. After the bond is issued the interest due (but not payable until the end of the period) accumulates gradually until the date of the next interest payment. This accumulated interest, to be paid after, is called accrued interest. It is not included in the price of Liberty Bonds as quoted on the Stock Exchange but is computed separately and paid by the bond buyer to the seller. Therefore a price of 98 on the exchange means 98 plus “accrued interest.”

Allotted—When a bond issue is offered at a fixed price and is oversubscribed, as for example in the case of the Second Liberty Loan, not all subscriptions can be completely filled. The distribution of bonds to subscribers is then according to some plan or rule which has to be adopted. This is called “allotment.”

Asked Price—The lowest price at which any security is offered for sale.

Bid Price—The highest price which any buyers are willing to pay for a security.

Basis—A term used to describe the price at which a bond must be sold to return a certain interest yield. For example, a Liberty $4\frac{1}{4}\%$ bond maturing in ten years and selling at 98 would be on a $4\frac{1}{2}\%$ "basis."

Blank Indorsement—Also called "Indorsement in Blank." The signing of a bond, or stock certificate, on the back, or on the line provided for the purpose, by the person in whose name the certificate is made out, without specifying any new owner; that is, the space for the new owner's name is left "blank." Any one holding the bond or certificate can then sell it as it is, since it is good in the hands of any bearer.

Block—A considerable number of bonds or shares of stock sold at once; as, a block of 20 bonds, or 10,000 shares of stock.

Bond—A document under seal providing for the payment of a specified sum of money at a future date, under certain conditions specified herein. It may or may not bear interest; the date of payment may be fixed or optional, or the bond may be perpetual; it may be based on a mortgage or may be simply a promise to pay; it may be issued by a government, a

municipality, or a corporation, and its other provisions may vary widely.

Bond Tables—A series of tables showing the prices at which bonds of different interest rates and periods to maturity must sell in order to afford the buyer different yields on his investment. Current annual **income** from a bond is easily calculated by arithmetic, but the **yield** can be obtained only from a Bond Table or by an elaborate formula.

Borrowing—When the seller of a security cannot, or for any reason does not wish to deliver the certificate at once, his broker temporarily borrows the required certificate from some other owner and makes the delivery. Thus the owner of a Liberty Bond who lives at a distance from New York can sell at any moment in the New York market, without waiting until his bond reaches New York.

Buying Order—An order to buy a security may be given by letter, telegram, or telephone; it may be to buy "at the market"—which will mean the "asked price"—or at a specified price; it is good for the day only, unless given as "good until cancelled," or "open," in which case it holds good until the broker is otherwise advised.

Capital—In economics, wealth which is used

for the purpose of producing more wealth. In finance, that fund of wealth which is available for investment in securities, or in new enterprises, or in the enlargement of old ones.

Capitalization—The total of stocks, bonds and notes issued by a corporation. The term capital is often erroneously used in place of capitalization.

Close Market—A market in which bid and asked price are close together. All Liberty bonds have a very close market, usually 20c or 40c apart on \$1,000 bonds.

Closing—The last price for the day. In case of inactive securities the last bid and asked prices.

Collateral Note—A promissory note secured by bonds, stocks, mortgages, or other paper evidences of value.

Collection of Coupons—The coupons attached to the coupon form of bond are clipped off when due and deposited to the credit of the owner's bank account, or cashed if desired.

Commission—The broker's charge for buying or selling. The N. Y. Stock Exchange rule is $7\frac{1}{2}$ c per share each way for stocks selling under \$10; stocks selling at \$10 and under \$125, 15c per share; at \$125 or more, 20c per share. Minimum for one transaction is usually

\$1.00. For bonds, \$100 of par value is figured as equivalent to one share of stock. On Liberty bonds, however, there is no established commission. A frequent charge is 30c. per \$1,000 par value, minimum 30c.

Compound Interest—The method of computing interest by which accrued interest is added to the principal at stipulated intervals, usually three or six months, so that the lender or depositor receives interest on interest. Liberty bond interest is not compounded but is paid to the holder as soon as due.

Confirmation of Order—When a broker receives an order to buy or sell he “confirms” the terms of the order back to the customer in writing to avoid the possibility of error.

Consols—Abbreviation for the consolidated debt of England; British government bond.

Conversion—Any bond or stock may be made convertible into another bond or stock. The terms of the convertible privilege are usually, but not necessarily, stated in the bond or the stock certificate. Converted Liberty bonds retain their original maturity dates.

Coupon—A small detachable part of a coupon bond representing the interest due at a specified date. The coupons have the same security behind them as the principal of the

bond. A registered bond has no coupons, the interest being paid by check when due.

Credit—The deferring of a payment. Since payments of every sort are constantly being deferred, a large volume of credit is always outstanding. A bank check represents the transfer of credit. A bank deposit is a credit on the bank's books, which may be withdrawn in the form of cash when desired. (Savings banks, however, usually retain the right to require 60 days notice of large withdrawals of cash.) Credit may, or may not, be represented by a promissory note. The "money market" is really a market for a bank credit. The commercial paper market is a market for commercial credits in note form.

Date of Issue—The date when a bond or note begins to run and interest begins to accrue as shown on its face. Illegal if Sunday.

Debenture—A bond secured only by the general credit of the company, not by a claim on any specific property.

Denomination—The par value of a bond. Bonds are usually issued in \$1,000 and \$10,000 denominations, often in \$500 and \$100. Liberty bond denominations range from \$50 to \$100,000.

Discount—The per cent. by which a security sells below par value. A \$100 Liberty bond

selling at \$95 is at a discount of 5%. A note is discounted when the interest to maturity is deducted, leaving the present worth of the note. The stock market "discounts" a future event when the event has had its effect on prices beforehand, having been reduced, as we might say, to its present worth.

Exempt from Taxation—Any bond may be wholly or partly exempt from taxation, but this fact does not show in the bond itself. The owner must inform himself in regard to taxes.

Face Value—The value of a bond or note as given on its face, as distinguished from market value or the price at which it happens to be selling at any time. For a bond, same as par value.

First, Second, etc.—In the name of a Liberty Bond these designate the order in which the issues were offered. In the name of a mortgage bond, they refer to the priority of the mortgage in its application upon the company's property.

Fluctuation—Change in price. Usually refers to minor or temporary changes. Liberty Bonds fluctuate in "steps" of 2 cents per \$100, other bonds 12½ cents.

Gilt Edged—Very high grade. Liberty Bonds are gilt edge par excellence.

Good Delivery—A bond or stock certificate which is good in the hands of any bearer and can therefore be delivered on the Stock Exchange without formalities.

G. T. C.—Good until countermanded or executed. Used in giving orders to buy or sell. "Open" means the same thing but is not so generally used.

Guaranteed—Any security issued by one company may be guaranteed by another company, as to either principal or interest or both. Slightly different from "assumed," which means that the bond is taken over and becomes the bond of the assuming company. "Guaranteed" is sometimes loosely used to mean "secured," as "Liberty Bonds are guaranteed by America's \$250,000,000,000 of wealth." A guaranty may or may not appear on the face of the security, or may be by indorsement.

Holder—Usually means owner. In law, "holder in due course" is one, not the original holder, but who obtained possession in a legal way and in good faith. He holds free from any defect of title of prior parties.

Income—As applied to bonds, the amount of interest received yearly by the holder. The word also covers dividends from stocks, salaries, business profits, etc. The income from

a bond differs from the "yield," which includes not only the annual income but also the present worth of the profit or loss which will result from the payment of the bond at par at maturity.

Income Bond—A bond on which interest is payable out of the company's income **if earned**; otherwise the company is under no obligation to pay the interest. Interest on such a bond may be cumulative or non-cumulative—it is important to note which. Governments and municipalities never issue bonds of this kind.

Indorsement—The signature of the holder written on the back of a note, check, bond, or stock certificate. Sometimes the payee (person to whom payable) is designated; if not, the signature constitutes an indorsement in blank"—that is, the name of the payee is left blank so that any holder can fill in his own name. This makes the instrument payable to bearer, since any bearer can fill it in. The signature should exactly correspond with the name as shown on the face of the instrument.

Indorsed Bonds—Bonds which have some indorsement or notation on them not pertaining to them as a security. This may interfere with their salability. Notes or securities of any

kind should not be defaced or added to in any way.

Interchangeable Bonds—Are changeable from coupon to registered form, or vice versa, at the request of the holder.

Interest—Payment for the use of money in proportion to time used.

Interest Date—The date when interest on a bond is payable.

Internal Loan—A government loan which is sold to investors within the country. Contrasted with an external loan, which one sold to foreigners. The external loan practically has first claim on a government's receipts, since non-payment of the interest would be likely to cause complications and disputes with foreign nations.

Instalment—A part payment, remainder being payable at stated intervals.

Investor—A buyer of income-producing property, or of property which he believes will become income-producing, whose principal object in the purchase is the income to be received. An "investor for profit" is, strictly speaking an investor who hopes also for a profit from a rise in price. The term investor is loosely used to mean any buyer of securities.

Issue—To sell, distribute, or otherwise place in the hands of investors; as a noun, the outstanding securities of a certain kind so distributed. "Issue price" is the price at which the securities are offered to the public; usually above the "underwriting price" at which the securities were sold to the underwriting syndicate, the difference representing the expenses and profits of the underwriters.

Limited Order—An order to buy at (or below) a specified price, or to sell at (or above) a specified price. Distinguished from a "market" or unlimited order.

Loan—As describing an issue of bonds, this term is for the most part confined to government issues; as, the First Liberty Loan.

Loss of Bonds or Certificates—A safe deposit vault is the only perfectly safe place for securities. The U. S. Government will not stop payment on coupon bonds or coupons if lost by the owner. If a registered bond is lost, the Treasury on notice will prevent the transfer of the missing bonds on the department's books. The notice must fully describe the bonds, giving numbers, name of issue, per cent, and exact name in which they are registered.

Market—A place for buying and selling. Also used to mean market price. Also to signify

the state of the market, as "a close market," "a thin market," etc.

Market Order—An order to be executed at the best price obtainable at the time.

Market Price—The current or prevailing price at the time.

Maturity—The date when a bond or note becomes payable. Also sometimes used to mean "time to run," as "short maturities," "distant maturities."

National Debt—The total of bonds, notes and certificates of indebtedness owed by a nation. As commonly used, would not include demand notes (greenbacks), or current accounts due.

Negotiable—Payable to bearer, or can be made so by indorsement. A security good only in the hands of the original holder is "non-negotiable," but can be transferred by the consent of the person or corporation issuing it. A registered bond is non-negotiable, since transfer on the books is necessary before title to it can be passed to another person.

Note—A written promise to pay a sum of money at a specified date, or on demand. The amount and date payable must be definite, and it must be dated and signed. It is usual, but not strictly necessary, to state the place for payment; if not stated, the note is presented

at the maker's place of business or residence. To hold indorsers, a note should be presented at the exact time and place of maturity; but delay does not release the maker of the note. Indorsers must be notified at once of failure of the maker to meet the note when due. If a note is lost, the maker still owes it, if the obligation can be proved or is admitted. Some State laws allow three additional "days of grace" for payment, during which interest continues. If rate of interest is not stated, the legal rate in State where made prevails. Legally, a Liberty Bond is substantially a note executed by the U. S. Government.

Normal Income Tax—The rate of income taxation which applies on all incomes covered by the law. Distinguished from the surtaxes or supertaxes, which apply at higher rates on larger incomes.

Offered Price—Same as asked price.

Open Order—Same as "G. T. C. order"—good until countermanded or executed.

Opening Price—The first price for the day. In a very active market several prices may be made at the same time. This is called a "wide opening."

Optional Maturity—When a bond due at a specified date may be paid off earlier at the

option of the corporation or government issuing it, it has an optional maturity. All the Liberty Bonds except the Third 4 $\frac{1}{4}$ s have optional maturities.

Outstanding—The amount of a bond issue in the hands of investors. Often less than the total which has been authorized. Sometimes the bonds are not all issued, or the company may buy and carry some of them itself, in which case they are not considered to be outstanding.

Par—The nominal value of a security as stated on its face. In the case of a bond, this is the amount payable on maturity. In the case of common stocks, par value has no significance to the holder. For that reason the New York law permits the issue of stocks with no par value.

Part Paid—A security for which full payment has not yet been required by the issuing company. It may of course be bought and sold in this part paid condition. Liberty Bonds were issued payable in instalments but no market was created for the part paid bonds. "by the hundred." Used to mean hundredths.

Per Cent—Abbreviation for per centum—That is, a 4% Liberty Bond pays four-hundredths of its par value in interest each year.

Premium—The excess of the price of a security above its par value. Thus a Liberty Bond selling at 105 would be at a premium of 5%.

Present Worth—The value now of a payment due at a future date. It is the sum of money which, at the specified rate of interest, will amount to the sum due at the date when payable.

Principal—The sum upon which interest is computed.

Quarterly—Some bonds pay interest every three months, and most stocks pay their dividends thus. Liberty Bonds pay interest every six months.

Quotation—A quoted price or bid and asked prices.

Rate of Interest—The per cent on par or on the principal paid annually.

Rating—The relative financial standing of a person, firm, or corporation. The term is also applied to bonds in a similar significance, with reference to their comparative investment standing.

Realize—To convert into cash; sell.

Receiver's Certificates—Notes issued by a receiver against the property under his manage-

ment. They take precedence over all other securities the company has outstanding.

Recourse—The legal right of the holder of a note to demand payment from indorsers.

Rediscount—A second discount; that is, a bank which has discounted a note for the holder “rediscounts” the note with another bank or especially with a Federal Reserve Bank.

Refunding—Issuing new bonds to take the place of those falling due.

Registered Bond—A bond bearing the name of the owner, whose ownership has been recorded on the books of the company or government issuing the bond. Applies also to stocks.

Rentes—The government bonds of France.

Rights—Privileges given to security holders to subscribe for a new issue at less than its current market value.

Savings Bank Bonds—Those which are legal investments for savings banks in states which restrict such investments by law.

Scrip—Temporary certificates, to be exchanged later for money or for permanent certificates.

Scrip Dividend—A dividend paid in notes or due-bills instead of in cash.

Securities—Written or printed papers which

represent the ownership of all forms of investments.

Seller's Option—A contract under which the seller may make delivery of the thing sold, at his option within a specified period. For example, "seller 30" means that the seller may deliver at any time up to 30 days.

Sell Short—Selling for future delivery something not available for delivery at the moment. What is really sold is not the thing itself but a contract for its delivery at some future date. Such a contract may of course be sold and resold many times. On the New York Stock Exchange delivery in such cases is usually effected by borrowing the necessary certificates. When the certificates he has sold become available to the short seller (either by purchase or in any other way), the borrowed certificates are returned to their owners. The practice of selling for future delivery is common throughout all lines of business, but the term "selling short" is applied to this practice only on the exchanges.

Senior Mortgage—One which has precedence over others. Contrasted with "junior mortgage," one which follows another or others.

Shareholder—English term for stockholder. More accurate than the American term, since

what the stockholder owns is an undivided "share" in the enterprise.

Short Account—Total outstanding short sales.

Single Name Paper—A note without indorser.

Sinking Fund—Sums set aside at intervals to extinguish a debt or to retire bonds.

Standard Bonds—Those which are well known and entitled to a good investment rating.

Sterling Loan—Bonds payable in English money.

Stock Dividend—New stock issued pro rata to holders of the old stock.

Street Certificates—One which has been indorsed in blank and is therefore a good delivery in Wall Street.

Subject to Prior Sale—When a banker offers bonds he makes them subject to prior sale, as otherwise he might sell more than he could deliver.

Subsidiary Company—One owned or managed by another company.

Temporary Receipts—Issued to show the payment of money for securities not yet ready for delivery. Are often bought and sold in the market in lieu of the coming securities.

Traction Bonds—Those issued by street rail-

ways, subways, elevated or suburban lines.

Treasury Bills—Short term notes issued by a government treasury.

Two-name Paper—Notes bearing two signatures, or one signature and one indorsement.

Underwriting Syndicate—A combination of bankers or investors who agree to buy an entire issue of securities at a fixed price. The securities are then offered to the public at a somewhat higher price. On those that are sold the underwriting syndicate makes the difference in price. Those not sold to the public are delivered to the syndicate pro rata at the price originally agreed upon.

Unsecured Bond or Note—Same as debenture.

Warrant—An order by a municipal official upon the treasurer, not paid for lack of funds, but stamped to bear interest from the date presented. Later such warrants are “called” for payment.

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